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Family Housing Self-Help and Improvements

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Evaluation of Recommended Improvements to the Family Housing Self-Help Program

by
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In FY85, the Facilities Branch of the Army Housing Management Division requested that the U.S. Army Construction Engineering Research Laboratory (USA-CERL) evaluate and recommend improvements to the Army Family Housing Self-Help Program. This report evaluates USA-CERL's suggested improvements implemented in the program at two installations during FY86. The evaluation includes a cost/benefit analysis of the improved program, a survey of occupants' and base personnel's opinions of the modified program, and an examination of the recommended task, equipment, and supply lists. The data obtained revealed a substantially larger cost avoidance in FY86 than in FY85 due to increased participation in the Self-Help Program. Results showed that both occupants and installation personnel favored the program. Based on results of the analyses, recommendations for the further improvement of self-help methods and procedures in the areas of organization, operations, training, and documentation were validated.

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FOREWORD

This research was conducted for the Army Housing Management Division, Office of the Chief of Engineers (OCE), under reimbursable Work Unit HE6, "Family Housing Self-Help and Improvements." The work was performed by the Facility Systems (FS) Division of the U.S. Army Construction Engineering Research Laboratory (USA-CERL). The OCE Technical Monitors were Mr. Alex Houtzager, DAEN-ZCH-F, and Mr. Helmut Gramberg, DAEN-ZCF-B. Mr. E. A. Lotz is Chief of USA-CERL-FS. The Technical Editor was Gloria J. Wienke, Information Management Office.

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EVALUATION OF RECOMMENDED IMPROVEMENTS TO THE FAMILY HOUSING SELF-HELP PROGRAM

1 INTRODUCTION

Background

Army Family Housing (FH) has high visibility since it is a separate budget item that is reviewed closely by Congress. The quality of Army Family Housing has drawn a great deal of attention in recent years due to its impact on soldier morale and increased Congressional scrutiny.

The Army has implemented a Self-Help (SH) Program to save money, improve the quality of housing, and instill pride of residency. As part of this program, installations provide training and materials to FH occupants so that they can perform simple housing maintenance tasks themselves, thereby saving the Army a significant amount in maintenance and repair costs. However, the SH Program has recently been criticized by the General Accounting Office (GAO), as being outdated, inefficient, and ineffective. Therefore, the Army Housing Management Division asked the U.S. Army Construction Engineering Research Laboratory (USA-CERL) to comprehensively evaluate and recommend improvements to the current SH Program.

After an in-depth analysis of existing SH Programs via questionnaires, site visits, and telephone interviews, problems were isolated. Problems related to three aspects of the program: operations and management, documentation and guidance, and cost-effectiveness. In the operations and management area, for example, the supply of materials and tools, occupants' awareness of and the content of training, the distinction between self-help and preventive maintenance (PM), and the SH Program image and program incentives were identified as needing improvement. Once problems were discovered, solutions were developed and recommended for implementation. The recommendations proposed changes in the SH Program's organizational structure, operational procedures, occupant training classes, and documentation of self-help maintenance and repair procedures. The study is detailed in Technical Report P-86/08, *Family Housing Self-Help Program: Evaluation and Recommendations for Improvements* (USA-CERL, July 1986).

Beginning in January 1986, many of USA-CERL's suggested improvements were incorporated into the SH Programs at Fort Devens, MA and at Fort Lee, VA. The Fort Lee program differs from the Fort Devens program in that Fort Lee requires no formal training, uses recordkeeping procedures different from those of Fort Devens, and operates its Self-Help Issue Point (SHIP) store differently. After a 6-month test period, the programs at both installations were evaluated.

Objective

The objective of this report is to present the results of an evaluation of the recommended improvements to the U.S. Army Family Housing SH Program.

Approach

A test plan was developed to provide guidance to installation personnel for the management and technical effort during the test period (Appendix A). The plan explained the nature and extent of the test, coordinated an orderly schedule of events, served as a reference for test procedures and communication, provided a written record of the test, and supplied guidance for evaluating the recommendations.

Many of USA-CERL's recommendations for establishing a more comprehensive SH Program were incorporated at each test site. Measurement techniques for evaluating the effectiveness of the recommendations were established according to the individual installation's capabilities for data collection and reporting. To provide a "before and after" reference of the measured effects, baseline data similar to those collected in the previous study were obtained.

Mode of Technology Transfer

The results of the evaluation will be the basis for revisions to applicable Army regulations and for preparing a standard operating procedure to establish and operate Self-Help Programs at other installations. The following documents currently define the Self-Help Program and may be affected by the results of this research:

- AR 420-22, Preventive Maintenance and Self-Help Programs
- AR 210-50, Family Housing Management
- TB ENG 402, Facilities Engineering Self-Help Program
- DA PAM 210-2, Handbook for Family Housing Occupants.

2 DATA COLLECTION

Two installations with disparate SH Programs were selected to test some of the recommended improvements: Fort Lee, VA and Fort Devens, MA. Fort Lee, which uses a progressive program modeled after commercial SH programs, was selected to contrast with the stable, conventional program at Fort Devens. To adequately determine the success or failure of the recommended improvements to the SH Program, various quantitative and qualitative data were gathered. The data collection instruments varied accordingly, ranging from equipment loan records to telephone interviews. To improve the accuracy of before and after comparisons, data comparable to those gathered when initially evaluating the SH program were collected where possible.

Facilities Engineering Supply System (FESS) Records

FESS records document the material costs incurred by the SH Program and are used for accounting and inventory control purposes. Among other things, the records indicate the quantities and costs of materials and supplies acquired by the SHIP store as well as the numbers of each issued to FH occupants. Since SH tasks not performed by occupants will necessarily be completed by PM personnel, SH Program participation results in decreased PM labor expense. This PM labor cost avoidance was estimated as follows. For each material item, total issues per month were tabulated and an estimated labor completion time was assigned to its associated SH task. PM team labor costs were extrapolated by applying the prevailing PM wage rates to these estimates of time per task. Thus, analysis of the FESS records provided the gross dollar benefit of the SH Program. FESS records were obtained from both test sites.

Labor and Equipment Utilization Cards

Labor and Equipment (L&E) Utilization Cards, which document tasks completed by the PM team, were provided only by Fort Devens. These cards describe the types of PM tasks completed and the corresponding completion times. The PM shop personnel were instructed to mark tasks which should have been accomplished by the occupant (i.e., self-help tasks). The records were initially inspected to verify that the tasks marked by PM personnel were allowable SH tasks. Further analysis of these data indicated the frequency with which PM personnel are used to complete SH tasks as well as the types of SH tasks most frequently completed by PM personnel. This allowed easy identification of labor costs which could have been avoided through more extensive use of the SH Program.

Because the PM team at Fort Lee does not complete SH tasks, data from their L&E Cards would not apply to this analysis.

Opinion Questionnaires

Questionnaires, similar to those administered in formulating the recommendations being tested, were administered at the completion of the test. Questionnaires were distributed to family housing occupants and the Directorate of Engineering and Housing (DEH) personnel who were associated with various aspects of the SH Program. The number of questionnaires distributed to family housing occupants at each installation was equal to the number administered during the previous study (250 at Fort Lee and 370 at

Fort Devens). A list of family housing units was compiled which included only those units whose occupants had been living in the unit for at least 1 year and were expected to continue living in the unit for 2 more years. Occupants to be included in the survey were randomly selected from the list. Questionnaires were distributed by the DEH at each installation to those engineering personnel involved with the SH Program. Occupant and DEH opinions regarding all aspects of the SH Program (including the recommended changes) were gathered using these instruments.

Detailed Interviews of DEH Personnel

Information not easily collected by the aforementioned methods, such as information regarding command support, promotion of and incentives for participation in the SH Program, and the appropriateness of the new hours and days of operation, was gathered through telephone interviews with the managers of the Self-Help Service Center (SHSC) and the U-Do-It Center (Fort Devens and Fort Lee, respectively) and a DEH representative at each installation.

SH Training Class Student Evaluations

One recommendation of the initial study was to improve the SH training course. To gauge the appropriateness of the suggested improvements, training evaluation forms were distributed to occupants who attended the revamped course at Fort Devens. (Fort Lee does not offer a training course; it provides only over-the-counter training at the U-Do-It Center when materials are issued or tools loaned.) The evaluations contained occupants' opinions of the training course and the training facility itself.

Tool and Equipment Loan Records

Fort Devens monitors the use of tools and equipment in the SH Program. Each time an item is checked out by an FH occupant, the SHSC personnel record the loan. These records, which show the frequency with which tools are used in the SH Program, were used to evaluate the appropriateness and completeness of USA-CERL's recommended equipment list. While Fort Devens used the recommended equipment list, Fort Lee used its own list and recording system.

Task and Supply Lists

Both installations provided task and supply lists. These lists were compared to the test plan recommendations to determine compliance and comprehensiveness at each installation.

3 DATA ANALYSIS AND RESULTS

Facilities Engineering Supply System (FESS) Records

The FESS records indicate the number of times each type of material was issued to FH occupants for use in SH tasks. Since SH tasks not performed by occupants will eventually be performed by PM shop mechanics (or SO shop mechanics if the problem goes uncorrected for too long), the SH Program forestalls some direct labor expense. One can estimate this direct labor cost avoidance from the FESS records. The analysis proceeded as follows:

1. Each material item issued was identified with some SH task (e.g., issuance of weatherstrip indicates weatherizing),
2. The average amount of time (in hours) that a PM mechanic spends performing a specific task, or group of tasks, was estimated from PM shop records and discussions with PM shop personnel,
3. An appropriate PM Shop wage rate (\$16.69/hr at Fort Lee and \$19.00/hr at Fort Devens) was applied to the average time to complete each task to determine the average dollars of labor expense avoided for each task completed under the SH Program,
4. Individual dollar amounts were summed to obtain the total dollar benefit of the SH Program (i.e., the total cost avoidance accomplished by the SH Program).

The time values assigned to SH tasks were gathered from discussions with, and L&E records of, PM mechanics, and reflect the idiosyncracies of the Family Housing PM program. Under the present system, FH occupants place a PM card in their window when they need a task performed. PM personnel drive around in a truck and stop when a card is spotted. This system precludes group scheduling of tasks. Therefore, the performance times estimated by PM personnel reflect (with some exceptions) tasks performed on a one-by-one basis and include travel time. Additionally, tasks are mostly classified by the item worked on or by the item(s) used to perform the task (e.g., repair or replace door knob). In recording PM work on L&E Cards, no distinction is made between repairing, replacing, and installing. Thus it was impossible to know the proportion of replacing, repairing, and installing jobs within each task category, and the performance times for each. (Installing may take much more time than repairing, for example.) Therefore, time values were assigned to reflect the average performance time associated with each task.

Analysis of the FESS data provided by Fort Devens (Appendix B) indicated that the labor cost avoidance as a result of SH material issues was approximately 16 percent greater in FY86 than in FY85. Applying a wage rate of \$19.00/hour, cost avoidances for FY85 totalled \$232,303.00 versus \$268,901.00 in FY86. The respective cost avoidances per housing unit were \$134.67 and \$155.88. (The FY86 annual value was obtained by extrapolating from the 10 months of 1986 FESS data provided.)

The data were divided into several categories (e.g., carpentry, plumbing). The largest portion of this year-to-year change was due to a \$65,000 increase in savings in the carpentry category. There were also small increases in HVAC, security, grounds maintenance, and pest control labor savings. On the other hand, there were somewhat dramatic decreases of \$26,000 and \$15,000 in the task areas of electrical and plumbing, respectively.

Since neither the task list nor the supply list changed appreciably from 1985 to 1986, it was determined that the decreases in the electrical and plumbing categories were due to the scheduling of inventory purchases. In many cases, a large quantity of a given item was purchased in FY85 but this item was not repurchased in FY86. However, an overall increase in SH activity by FH occupants led to the net increase in cost avoidance for FY86. While Fort Lee provided FESS data for both FY85 and FY86, a meaningful comparison of cost avoidances for the 2 years could not be conducted due to a change in inventorying procedures instituted at the beginning of FY86. Nevertheless, the calculated total FY86 cost avoidance for Fort Lee was \$135,101.44, averaging \$92.60 per housing unit (Appendix B). This should be considered a very accurate figure since Fort Lee reporting procedures are to charge the FH Self-Help FESS account for an item at the point of actual over-the-counter issue to a FH occupant.

It is interesting to note the difference in FY86 cost avoidance per unit between the two installations. Both test sites had similar levels of participation in terms of percent of occupants using the SH Program, but the Fort Devens estimated cost avoidance figure (\$155.88/unit) was significantly larger than Fort Lee's figure (\$92.60/unit). This discrepancy can be explained in part by the difference in wage rates between the installations. However, the estimated PM shop labor hours avoided through SH participation was greater at Fort Devens than at Fort Lee (8.2 hrs/unit vs. 5.5 hrs/unit). This disparity may suggest that Fort Devens occupants, on average, perform tasks which take PM personnel a greater number of hours to complete than those performed by Fort Lee occupants. Alternatively, the discrepancy may indicate that Fort Devens occupants participate in the SH Program to a greater degree than do Fort Lee occupants.

Labor and Equipment Utilization Cards

L&E Cards indicate the nature and completion time of tasks performed by PM personnel. During the implementation of the SH Program improvements (from January through July 1986), PM employees at Fort Devens marked those tasks performed by PM teams which are clearly SH tasks. Analysis of the cards included a simple tally of the type, number, and duration of SH tasks. In addition, special attention was given to the number of times each type of SH job was performed by PM personnel. Applying the labor wage rate of \$19.00 per hour to the total number of labor hours resulted in a total labor cost of \$25,519.10 over the test period (Appendix B). This direct labor expense would have been avoided had these tasks been performed by the FH occupants as intended. The average monthly labor cost for the test period was \$4,253.18. The types of tasks most often performed (in absolute numbers) by PM personnel were repairing faucet leaks, repairing door knobs, and replacing/installing door knobs. Note that these relatively simple tasks account for 52 percent of the PM teams' total hours during the period studied.

In the context of a full year, substantial labor cost savings can be realized through increased participation in the SH Program. Although these data (L&E Cards) could not be collected at Fort Lee, it is suspected that substantial labor cost savings could be realized at this installation as well.

While the data indicate that significant PM labor expense could be prevented if PM mechanics cease to perform SH tasks, it is questionable whether such a solution would be cost effective in all situations. Under "normal" circumstances, FH occupants have the time and patience necessary to complete SH tasks. However, this may not be the case when the service member is away for an extended period. For example, a spouse with several small children may find it too time consuming to acquire materials from the SHIP

and perform SH tasks, while simultaneously running the household single-handedly. In such a case, it makes sense for PM mechanics to perform SH tasks that would otherwise not be performed by the occupant. It may be more cost effective for a PM mechanic to complete a SH task if it will preclude an escalation of the the problem to the point where the occupant must call in a service order.

Opinion Questionnaires

FH Occupant Questionnaires

Family housing occupants at both Fort Devens and Fort Lee were surveyed for their opinions of the improved SH Program. A commercially available computer package, SPSS (Statistical Package for the Social Sciences), analyzed the questionnaires (i.e., computed the frequencies with which each question was answered "yes," "no," etc.). Comparison of the results from the two test site installations is difficult due to the differences in the operations of the two programs. Therefore, results will be analyzed and comparisons made only when applicable. Appendix C contains the processed questionnaires.

The first part of the FH occupant questionnaire established background information. Nearly half of the Fort Lee respondents have lived in their present quarters for less than 2 years, and less than 20 percent have lived in their quarters for more than 3 years. Approximately half of the Fort Devens respondents have lived in their present quarters between 2 and 3 years, and an additional 27 percent have resided in their quarters for more than 3 years. Fifty percent of the Fort Devens respondents indicated that they enjoy working with their hands; only 14 percent of the Fort Lee FH occupants responded similarly. While between 40 and 50 percent of respondents from both installations indicated they enjoyed working with their hands "sometimes," 38 percent of Fort Lee's and 6 percent of Fort Devens' respondents said they "do not." The distribution of formal education among service members from both installations was very similar; all respondents had completed high school and half had received some college-level instruction.

Other questions focused on the occupants' knowledge of the SH Program. While 53 percent of those surveyed at Fort Devens indicated that they were familiar with SH programs at other installations, 63 percent of the Fort Lee respondents answered affirmatively. Of those familiar with programs at other installations, about half thought other programs were about the same in scope as the one at their present post. Of those who thought the SH Program differed from installation to installation, three-fourths of the Fort Lee occupants thought that their program was more extensive than similar programs elsewhere, while the Fort Devens occupants were evenly split as to whether their program was more or less extensive than others. The overwhelming majority of respondents from both installations indicated they know the difference between occupant SH and DEH preventive maintenance. In addition, more than half of the respondents at each installation thought the SH Program should be expanded; only 10 percent of the Fort Lee respondents (and a smaller percentage of Fort Devens' occupants) suggested that the SH Program be decreased or terminated.

Approximately 90 percent of the respondents from both installations indicated that they participated in the Self-Help Program. Nonparticipants cited lack of time in approximately two-thirds of the instances as their reason for nonparticipation. Yard work appeared to be done most frequently at Fort Devens, followed by hardware, plumbing, carpentry, electrical, and painting tasks respectively. At Fort Lee, yard work,

hardware, plumbing, and carpentry were most frequently performed, followed by painting and electrical tasks. Eighty-two percent of the Fort Lee respondents and 75 percent of the Fort Devens respondents agreed that their installation encouraged program participation. Also, an overwhelming majority of respondents from both installations indicated that an awards program for outstanding quarters existed at their post. (However, both installations presently have only grounds maintenance awards programs.) Almost one-third of the respondents from both installations had not participated in the SH Program at their previous installation. Of those who had previously participated, a slight majority are participating at about the same level as they had at previous posts, with the remainder participating more than they had before.

The next section of the questionnaire focused on the occupants' knowledge of the program. Nearly 80 percent of the Fort Devens respondents indicated that they were provided information on the SH Program during an in-processing presentation, whereas only 42 percent of the Fort Lee respondents said they had been contacted in this manner. Smaller percentages at both installations responded that they had received information through letters, pamphlets, or other means. Approximately 5 percent of respondents said they had received no information. Only about 15 to 20 percent of those surveyed did not know what type of SH is allowed. All of the Fort Devens respondents knew that some form of identification is needed to obtain supplies, but only 82 percent of the Fort Lee respondents said that identification is needed. In both cases, over 90 percent of those surveyed knew where to get SH questions answered. At both installations, half of the respondents said that a PM team will perform SH tasks upon request. Again, approximately 50 percent of the respondents at both installations indicated they had never been told that an SO request should have been performed through the SH Program. About 30 percent had been told to use SH and the remainder had never made a request.

At Fort Devens, 99 percent responded that classroom training was required before supplies could be obtained. Seventy-three percent of Fort Lee's respondents said training is required. However, classroom training was recently discontinued at Fort Lee and training now consists of an informal briefing when supplies are checked out. Eighty percent of the Fort Devens respondents said that training was available to all family members, but 31 percent of these respondents felt that the training was not available at a convenient time or place for family members to attend. Occupants cited, among other reasons, the unavailability of transportation and interference with child-care responsibilities during the day as inconvenient. Fewer respondents at Fort Lee said that training was available for all family members.

Eighty-seven percent of the Fort Devens respondents thought the training they received was adequate. Of those who disagreed, the majority felt the training was too brief with the next largest percentage saying it was too simple. (Analysis of a previous questionnaire indicated that those who thought training was too simple were generally people with a college or graduate degree.) Seventy-nine percent of the Fort Lee respondents felt their training to be adequate. This may indicate that Fort Lee FH occupants are comfortable with the lack of formal training and that their expertise in SH tasks comes from other sources (e.g., training at other installations, training at Fort Lee before the modification of the SH Program, or previous experience).

Next, the survey encompassed occupant's responsibilities within the SH Program. At Fort Devens, 47 percent reported that both written guidance and training on occupant responsibilities was provided to them while 48 percent responded that only written guidance was provided. Forty-six percent at Fort Lee said they had only received written guidance explaining their responsibilities while 37 percent said they had received

both written guidance and training. Although training is not presently required at Fort Lee, many long-term FH occupants may have received training before the SH Program was modified. The rest of the respondents at both installations had received only training or no information (i.e., neither documentation nor training) explaining their responsibilities in the SH Program. Differences in responses among occupants at the same installation may be attributed to length of residency in family housing. SH personnel have speculated that perhaps changes in the program have not affected many long-term family housing residents. Forty-six percent of the Fort Devens respondents and 31 percent of the Fort Lee respondents had never received any written guidance or training specifying the difference between damage and normal wear and tear. When information was received, it was usually written. Twenty-eight percent of Fort Devens' and only 12 percent of Fort Lee's respondents did not know their degree of responsibility for damage to the housing unit. Of the remainder, over half the respondents at both installations stated they were required to both pay for and repair damage. The majority of respondents at both test sites knew the requirements for checking out of family housing quarters.

Two-thirds of the Fort Devens respondents and 58 percent of the Fort Lee respondents had purchased materials and tools needed to complete SH projects. At both installations, 80 percent of the respondents are satisfied with the availability of materials and tools. Ninety percent of the Fort Lee respondents are satisfied with the present SHIP store hours, while only 59 percent of the Fort Devens respondents are satisfied. The Fort Lee U-Do-It Center is open weekends and more evening hours than its counterpart at Fort Devens. Fort Lee's occupants would still like more evening and weekend hours, while Fort Devens' occupants would like more morning, evening, and weekend hours.

Approximately 90 percent of the respondents at both installations had received the Handbook for Family Housing Occupants (DA PAM 210-2) upon arrival at the installation. Slightly more than 60 percent of the respondents from Fort Devens received no information other than the Handbook, but nearly the same percentage of respondents at Fort Lee did receive additional information. Just under half of those surveyed at both installations said that reading the Handbook was not required as part of its SH training. About 40 percent of the respondents stated it was required reading and the rest said they received no training. Some occupants commented on the quality and usefulness of DA PAM 210-2. Appendix D contains a list of recommended commercial texts discussing home repair. Appendix E is an evaluation form for these references.

The final section of the questionnaire asked occupants for an overall evaluation of the SH program. At both installations, 83 percent of the respondents felt that the SH program met their needs in maintaining quality housing. Of those who answered "no, the program does not meet my needs," a large proportion at both installations cited too many program restrictions as the reason. (These occupants would like to perform tasks which are not currently allowed.) Eighty-nine percent of the Fort Devens respondents and 80 percent of the Fort Lee respondents had requested permission to perform an unauthorized task, and in both cases, over half of the requests were denied. Painting, carpentry, and grounds maintenance were the areas in which requests were most often denied. Also, 84 percent of the occupants questioned at Fort Devens and 70 percent at Fort Lee did not feel they were currently required to perform tasks which should be performed by others (i.e., PM mechanics). Of those who felt there were tasks which others should perform, over three-fourths of the occupants at both installations said they had performed these tasks anyway. When asked to suggest changes in the program, respondents from both installations responded with "none" most frequently, followed by material and tool availability.

Fort Lee's occupants were asked two questions specific to the changes in the SH Program at their installation. Eighty-two percent of the respondents were aware of program changes prior to receipt of the questionnaire. Also, 87 percent of the respondents had visited the new U-Do-It Center since it opened in March 1986. Fifty-eight percent of the respondents at Fort Lee had favorable impressions of the improved SH Program.

DEH Questionnaires

Results from questionnaires distributed to DEH personnel at each installation provided insights as well (Appendix C). However, the DEH responses should be evaluated with some caution since not all of these respondents were intimately involved in the operational aspects of the program. The DEH survey encompassed personnel with various functions in the SH Program, including PM mechanics and those who administer the SH Program. Given the diversity of respondents, it is reasonable that their opinions and/or knowledge of the SH Program might not be uniform.

The first section of the survey focused on the Self-Help Program's scope. When asked whether the scope of the SH Program at their installation had increased, decreased, or remained the same over the past 3 years, those surveyed at both installations answered almost identically, with about 85 percent indicating an increase in program scope and the remainder indicating no change. While the Fort Lee personnel were evenly split as to whether the program should be expanded or remain the same, the Fort Devens employees were 5 to 1 in favor of an expanded program.

When questioned about program information, personnel at both installations indicated that SH Program information is most often provided through in-processing presentations and pamphlets, with letters and other methods used to a lesser extent. All of the Fort Devens respondents noted that FH occupants are given written notification of permitted SH tasks, and the difference between SH and PM is clearly outlined to occupants. At Fort Lee, one-quarter responded that no written information describing permissible tasks is distributed and one-eighth said no clear distinction is made between SH and PM. All the Fort Devens and three-quarters of the Fort Lee respondents said that the PM team would perform SH tasks. All personnel indicated that the PM team or DEH Service Desk will tell FH occupants that requested work should be done through the SH Program.

The survey results also indicate that both installations provide information explaining occupant responsibilities. While Fort Lee primarily distributes written guidance, Fort Devens provides both training and written material. (Fourteen percent at each installation said neither training nor written matter were available.) In addition, respondents noted that occupants are made aware of the difference between normal wear and tear and damages; most thought the distinction is communicated via written materials or through both documentation and training sessions. Seventeen percent of Fort Lee's participants and 29 percent of Fort Devens' participants said neither training nor documentation were provided. However, nearly all respondents indicated that their installation has a method for identifying and quantifying damages in FH units. The SHCS manager at Fort Devens indicated that billing and collecting for damages is performed by several offices.

With respect to program participation, 100 percent of those surveyed at each installation noted that SH participation is promoted at their base. While all of the Fort Devens respondents thought that the majority of occupants participate in the program, only 43 percent of those at Fort Lee felt similarly. In addition, while more Fort Lee

respondents (as compared to those at Fort Devens) thought occupants under participate in the SH Program, Fort Lee personnel found SH tasks performed by occupants unacceptable less often than did their counterparts at Fort Devens. Furthermore, all of the Fort Devens employees said occupants do not perform extra allowable SH tasks, while Fort Lee workers were evenly split on the issue. All respondents indicated that their installation gives awards or recognition for outstanding quarters. (Presently, however, neither installation has an awards program for quarters; both give awards for superior grounds maintenance and external appearance.)

When asked whether rank makes a difference in the level of SH participation, approximately 60 percent of all DEH respondents thought it made no difference. Respondents at Fort Devens singled out occupants of rank O4 and above as those having low participation rates. Fort Lee respondents indicated that those of rank E5 and above have fairly low participation

The next section of the questionnaire pertained to training. While all of the Fort Devens DEH personnel indicated that SH training is provided to occupants, only half of the Fort Lee personnel concurred. In addition, all the Fort Devens respondents said that training is required before SH tasks can be performed, compared to one-eighth of the Fort Lee respondents who answered similarly. (Note that formal training is not required at Fort Lee.) Approximately three-fourths of those surveyed at each installation indicated that SH training is available to all family members. All of those at Fort Devens thought training was offered at a convenient time and place. Personnel at both installations felt that most FH occupants receive training. Concerning a related issue, 29 percent at each installation felt that FH occupants had occasionally purchased materials required for SH tasks, and most of the remainder "don't know."

Several questions concerned program documentation. Seventy-one percent of the Fort Lee respondents and 57 percent of the Fort Devens respondents indicated that occupants are provided a copy of the Handbook for Family Housing Occupants upon arrival on base. Moreover, 86 percent at each installation said supplemental information is provided as well. One hundred percent of those surveyed at Fort Lee said that the Handbook for Family Housing Occupants is not required as part of SH training while only 43 percent of the Fort Devens personnel concurred.

Respondents were asked various questions relating to program performance. All of the Fort Devens personnel and 88 percent of Fort Lee personnel felt that the SH program assists the DEH in maintaining quality housing. When asked which aspects of the program could use improvement, the responses were specific to the installation. For instance, at Fort Devens, 50 percent of the respondents felt that both the training and the SHSC hours needed improvement, with a lesser proportion (15 percent) citing scope of work allowed, funding, and availability of materials as problems. On the other hand, half of the respondents at Fort Lee mentioned training, 38 percent felt funding, and 13 percent thought scope of work allowed needed improvement. In addition, respondents were asked whether the DEH has a technique for measuring the effectiveness of the Self-Help Program. While approximately one-quarter of the respondents at each installation said "no," most indicated that they did not know.

While 86 percent of the Fort Devens personnel surveyed felt that the SH Program is cost effective, only 25 percent of the Fort Lee personnel felt similarly. However, only 14 percent of those at Fort Devens, as compared to 57 percent at Fort Lee, indicated that they were satisfied with the quality of tasks completed by FH occupants. In addition, all of those surveyed at the Fort Devens DEH said reworking SH tasks is sometimes required, with 71 percent of the Fort Lee respondents answering likewise.

When asked about the scope of rework, one-third of Fort Devens' and one-fifth of Fort Lee's personnel noted that some rework is outside the scope of SH.

Fort Lee personnel were asked whether they had received any feedback from occupants concerning changes in the Self-Help Program. Forty-three percent of the respondents answered affirmatively, and all of the feedback was positive.

Contrasting DEH and Occupant Responses: Fort Devens

As the final step in analyzing the occupant and DEH questionnaires, the two sets of results at each installation were compared. While many of the responses to identical questions posed to the groups were similar, the disparity of opinion in other areas indicates misinformation or a lack of knowledge. As mentioned earlier, the DEH responses should be evaluated with some caution since not all of these respondents were intimately involved in the operational aspects of the program. The DEH survey encompassed personnel with various functions in the SH Program, including PM mechanics and those who administer the SH Program. Given the diversity of respondents, it is reasonable that their opinions and/or knowledge of the SH Program might not be uniform.

Concerning program scope, more than 80 percent of DEH respondents felt that the SH Program should be expanded. However, only 52 percent of occupants thought the program should be expanded. While some occupants indicated that they want more SH, the disparity between DEH and occupant opinions may reveal occupants' uncertainty as to whether they should be involved in the maintenance of Army facilities. On the other hand, many occupants appear to want more freedom to maintain their quarters as they wish. Also, when asked whether the PM team would perform SH tasks upon request, DEH employees and occupants gave widely different answers. All DEH personnel answered affirmatively, but only half of the occupants agreed.

Both groups were asked various questions concerning training. While the DEH employees and occupants had similar thoughts as to whether SH training was provided to all family members, they disagreed about its convenience. All of the DEH respondents felt that training was offered at a convenient time and place, but 30 percent of the occupants surveyed disagreed. Concerning occupant duties, 86 percent of those at the DEH stated that both training and written guidance describing housing responsibilities were provided to occupants. However, occupants were about evenly split as to whether both training and written guidelines or guidelines alone were distributed. In addition, when asked whether occupants ever purchase materials to perform SH tasks from a commercial store, 71 percent of DEH respondents did not know. On the other hand, two-thirds of the occupants surveyed said they had bought SH material or supplies. Occupants may have purchased tools and materials because they could not be obtained when desired at the SHSC, because the SHSC hours were not convenient, or perhaps because they prefer to own rather than borrow tools.

With regard to SH pamphlets and additional information, the occupants and DEH representatives had differing ideas of their distribution. While a little less than 60 percent of DEH personnel indicated that the Handbook for Family Housing Occupants (DA PAM 210-2) is distributed to occupants upon arrival on base, nearly 90 percent of the FH occupants surveyed said they had received it upon arrival. In addition, while 86 percent of DEH respondents mentioned that further information is given to occupants, less than 40 percent of occupants had obtained it.

Contrasting DEH and Occupant Responses: Fort Lee

The Fort Lee DEH and occupant questionnaire results were compared. While responses to identical questions posed to both groups generally agreed, differences in opinion between the two groups provided useful insights. For instance, when asked what direction the SH Program should take in the years ahead, half of the Fort Lee DEH respondents suggested that the program be expanded and half said it should remain the same. While 88 percent of the occupants agreed that the program should be expanded or remain the same, the remainder felt it should either be decreased in scope or terminated.

Opinions differed with respect to participation level among occupants as well. While 92 percent of the occupants said that they participate in the SH Program, only 43 percent of the DEH respondents felt that a majority of occupants participate. Also, when asked if the PM team will perform SH tasks upon request, three-fourths of DEH personnel and one-half of the occupants answered "yes"; the remaining 25 percent of the DEH respondents and 17 percent of the occupants said "no." One-third of the respondents did not know. It is interesting to note that only one-fourth of the DEH personnel surveyed said that the PM team will not perform SH tasks while the stated policy of the DEH is that the PM team will do such tasks only under special circumstances.

When asked about occupant responsibilities, approximately half the occupants stated that they had received both training and written guidance concerning their housing responsibilities, while more than a third indicated that only written guidance was provided. However, none of the DEH employees indicated that both training and written guidelines were provided; 71 percent said that only written matter was distributed.

When asked whether training was required before supplies can be used, the DEH and occupant responses were almost completely opposite. Seventy-three percent of the occupants answered "yes" while 88 percent of the DEH employees answered "no." (Fort Lee has no mandatory training policy.)

Generally, DEH personnel thought occupants purchase materials for SH projects from a commercial store much less frequently than occupants actually do. While 58 percent of the Fort Lee occupants surveyed stated that they had bought supplies, only 29 percent of the DEH employees predicted such purchases.

There was also some discrepancy as to the occupants' opinions of the changes in the SH Program at Fort Lee. Nearly all of the occupants surveyed were aware of changes in the Fort Lee program and had visited the new U-Do-It Center. Of these occupants, 58 percent had favorable and 36 percent had unfavorable impressions of the changes. However, from occupants' comments, DEH personnel felt occupants were pleased with the new program. Nearly half of those employees surveyed had received favorable feedback from occupants; none had received negative feedback.

DEH Personnel Interviews

Interviews with DEH and Self-Help Service Center personnel revealed a feeling that the SH Program is improving and that many of the USA-CERL recommendations are proving successful. Personnel were first queried about command support. Fort Lee personnel were very satisfied with the support they were receiving, but Fort Devens personnel identified a need for more command support from above the DEH level. The

support of the Installation Commander is needed to assure the program has the necessary facilities and is fully promoted.

Those interviewed provided valuable ideas for promoting the SH Program and incentives designed to increase occupant participation. Promotional suggestions included flyers distributed to family housing units, newspaper advertising, and cartoon posters illustrating SH tasks. Parking privileges and restaurant dinner checks were proposed as awards to those with outstanding quarters.

Personnel at both installations seemed satisfied with their present SHIP store hours.

Fort Devens' SHSC hours are as follows:

Monday	1230 - 1945
Tuesday	0930 - 1130, 1230 - 1545
Wednesday	0930 - 1130, 1230 - 1545
Thursday	1230 - 1545
Friday	0930 - 1130, 1230 - 1545
Center also open four Saturdays during Spring and Fall	

Fort Lee's U-Do-It Center's hours are as follows:

Tuesday - Friday	1000 - 2000
Saturday & Sunday	0800 - 2000

Staff at both installations felt these hours to be adequate but possibly too long at Fort Lee. (Fort Lee personnel estimated that about three-fourths of the equipment loans and material issues occur between 1200 and 1300 and between 1600 and 1700 hours.) However, Fort Lee's present hours would seem to be more in accordance with occupants' wishes for more evening and weekend hours than are the Fort Devens hours. The personnel also indicated a need for seasonal adjustments in operating hours to accommodate high use of lawn care equipment during the summer and generally lower use during the winter.

When asked about tasks, all of those interviewed said the recommended SH task list was adequate or should possibly be expanded. The recommended tool and material inventories were also reported to be working well. In addition, the interviews revealed nearly identical loan policies at both installations. Fort Lee loans all tools and equipment for 24 hours, except gas lawn mowers which are loaned for 2 hours. Fort Devens' loan periods are similar except that power lawn mowers and other grounds-maintenance items are all loaned for 2 hours at a time. (Push lawn mowers are permanent issues to occupants at Fort Devens.) Several complaints from occupants have been registered regarding the short loan period for lawn-care equipment, but SH personnel judge these loan periods necessary due to high demand for these items.

SHIP personnel at both installations felt a need for greater computerization of the SH Program. They feel a greater use of computers could definitely improve management (e.g., inventory control) of the SH operation as well as help improve customer satisfaction. Note that since the time of these interviews, Fort Lee has instituted a microcomputer-based data management system which monitors inventories, frequency of material and tool usage, daily dollar totals of issues, etc. (Appendix F).

Neither installation penalizes FH occupants for nonparticipation in the SH Program. Penalties are not necessary at Fort Lee where participation is not mandatory, and Fort Devens personnel indicated no need for penalties although participation is mandatory. Instituting penalties may serve to alienate FH occupants rather than increase participation in the SH Program.

Those interviewed were asked to describe what they felt were the ideal qualifications for employees of the SH Program. They indicated that any courteous person with a positive attitude should be able to manage counter service at the SHSC or U-Do-It Center. SHIP store managers and PM personnel, on the other hand, should have a strong multitrades background or some technical training. Additionally, those managing the program should have a knowledge of supply and inventory procedures as well as good public relations skills.

DEH personnel at both installations have not noticed any appreciable difference in occupants' awareness of their role in the SH Program since the USA-CERI recommendations were implemented. However, the managers of both the SHSC at Fort Devens and the U-Do-It Center at Fort Lee have noticed an increased awareness among occupants. It should be noted that these managers have daily contact with occupants whereas the general DEH staff does not. Moreover, according to those interviewed, occupants' attitudes toward the SH Program are improving and participation is increasing. As a result of the improved SH Program, the appeal and habitability of family housing is also improving.

Both installations are proving the cost effectiveness of the improved program, but personnel at both sites supplied ideas for further cost efficiency. For example, DEH staff feel it could be more cost effective to purchase all SH supplies locally rather than to order some items through the General Services Administration and others locally. Seasonal adjustment of staff levels and operating hours will also improve efficiency. Also, those interviewed felt a more efficient method of charging occupants for damages incurred is necessary.

SH Training Class Evaluations

Questionnaires administered to Fort Devens family housing occupants at the end of training indicate a high level of satisfaction with most aspects of the training program. At the beginning of the test plan, trainees indicated dissatisfaction with the facilities, however this situation was remedied by the end of the test. Many mock-ups are used as an integral part of Fort Devens' training and 89 percent of the trainees indicated they felt the training aids were excellent. Similarly, 75 percent of the respondents felt that the fire prevention training they received was excellent. However, only 45 percent of the respondents felt that the energy conservation training they received was excellent while 52 percent felt it was average. Of those who responded to the question regarding the overall quality of the training, 97 percent thought it was excellent. The vast majority of occupants, when questioned regarding the quality of the specific training sections (e.g., plumbing, electrical, etc.), indicated each was excellent. Eighty-two percent of the trainees gave a rating of excellent for the overall class. When asked if they felt the training was worth their time, 96 percent responded affirmatively. Finally, 89 percent of those who had attended training at other installations indicated that Fort Devens' training was better than that previously received. Appendix G contains a full tabulation of the results.

Discussion of Formal and Informal (On-the-Spot) Training

The differences between Fort Lee's informal training at the U-Do-It Center versus Fort Devens' formal training classes led to an evaluation of the two approaches. Considering the costs, formal and informal training are comparable; both types of training use displays and demonstrations (formal training to a greater extent), and neither requires additional labor expense as training is provided by the SHSC or U-Do-It Center manager.

Formal training has advantages over informal training in that training classes make occupants more aware of the SH Program and their role in it. This fact was revealed by the FH occupant questionnaires in which occupants from Fort Devens (where formal training is required) were more informed about the SH Program than their counterparts at Fort Lee. In addition, the Fort Devens occupants responded more often than did the Fort Lee occupants that the SH Program met their needs in maintaining quality housing.

From the perspective of the Fort Devens SHSC personnel and Family Housing PM mechanics, formal training saves time and money. Both groups feel that formal training ensures that occupants learn the rudiments of proper maintenance and repair procedures. Personnel have seen the results of formal training in the form of reduced rework of SH jobs. Since the beginning of a formal training program about 7 years ago, rework at Fort Devens has decreased substantially. In addition, personnel indicated that the frequency of rework has decreased much further since the implementation of the USA-CERL training course.

Tool and Equipment Loan Records

SHSC tool and equipment loan records were compiled by the Fort Devens SHSC personnel for the months of May, June, and July of 1986 (Appendix H) and the number of loans for each type of equipment was determined. Differences between the records and the USA-CERL recommended equipment list were identified.

While almost all of the 22 types of tools loaned by the SHSC were on the recommended list, there were a few exceptions. Items not on the recommended list included lawnmower gas cans, post hole diggers, and caulking guns, which were loaned 162 times, twenty times, and two times, respectively, during the 3-month period. It appears that the recommended list is fairly complete, but perhaps lawnmower gas cans should be added due to their high frequency of use at Fort Devens. Although not a problem at either Fort Lee or Fort Devens, some installations issue tools and materials in violation of regulations.

The comparison between the USA-CERL recommended equipment list (Appendix H) and the Fort Devens list provided another interesting difference. While USA-CERL suggests that five items be permanently issued to FH occupants, Fort Devens issues six items (Table 1).

Permanently issuing high-use items (tools) to quarters has disadvantages and advantages. On the down side, permanent issues represent a substantial Family Housing SH expense and increase inspection times when occupants clear quarters. However, permanent issues greatly advance the objectives of the SH Program. Permanent issues provide convenience for frequently performed tasks and allow occupants to perform tasks promptly. This easy access to tools helps occupants maintain quality housing and thereby

Table 1

USA-CERL's and Fort Devens' Permanent Tool Issues

USA-CERL recommended permanent issues	Fort Devens permanent issues
<ol style="list-style-type: none"> 1. Toilet plunger 2. Lawn/leaf rake 3. Garden hose and nozzle 4. Snow shovel* 5. Garden sprinkler 	<ol style="list-style-type: none"> 1. Toilet plunger 2. Lawn/leaf rake 3. Garden hose and nozzle 4. Snow shovel 5. Push lawn mower 6. Garden sprinkler
\$26.99 cost per unit	\$99.19 cost per unit

*in appropriate locations (\$21.69 per unit without shovel)

improves the morale of FH occupants. At Fort Devens, the question of permanent issues was decided at the installation headquarters. Personnel indicated that the decision was based on nonmonetary considerations. Specifically, command personnel wanted to enhance the installation's appearance and therefore lawn and garden tools were issued to quarters. By providing the means, command personnel hoped to get a greater effort and better results from FH occupants.

It is difficult to link the use of permanently issued tools to specific cost savings, but it is possible in some cases. For example, installation personnel point out that sprinklers avoid reseeding or resodding grass, and snow shovels reduce the amount of snow cleared by base personnel. Notice that the USA-CERL recommended permanent issues are generally geared toward tasks which are most efficiently accomplished by the occupants themselves.

In general, the justification for permanent issues is more qualitative than quantitative. One of the objectives of the SH Program is to improve the Army lifestyle. The Army loses a substantial amount of money every time a soldier decides not to reenlist. If the SH Program can help the soldier improve his surroundings, he has a greater incentive to reenlist. While there is no way to determine how much the SH Program affects the reenlistment decision, even a small correlation between the two could avoid thousands of dollars expended in training and familiarizing new recruits.

Task and Supply Lists

The task and supply lists provided by Forts Lee and Devens were compared to the suggested lists compiled by USA-CERL. Both installations allowed occupants to complete a majority of the USA-CERL recommended SH tasks, with Fort Devens allowing all but spot painting. While Fort Devens adopted all of USA-CERL's suggested task classifications (e.g., mandatory, allowed by special permission, etc.), Fort Lee did not (see Appendix I). In general, Fort Lee "encouraged" many of the tasks deemed "mandatory" by USA-CERL. Specifically, in the carpentry, electrical, plumbing, and security task categories, virtually all of the individual tasks designated "mandatory" by USA-CERL were "encouraged" at Fort Lee.

Occupants and personnel at both installations felt the variety of supplies at the SHIP store was satisfactory. However, many occupants (primarily at Fort Lee) have purchased SH supplies from a commercial store. Occupants may purchase SH supplies for several reasons, such as lack of knowledge of the program, understockage at the SHIP, or inconvenient hours of the SHIP. SHSC personnel at Fort Devens generally have not found understockage a problem and they have no consistent procedure for handling out-of-stock situations. (Occasionally, personnel write the occupant's name and phone number on a slip of paper and notify him or her when the supply is replenished.) Fort Lee's system consists of index cards which occupants fill out when a material is out of stock. This system has worked adequately.

Self-Help Program Promotion and Incentives

To gauge the quality and effectiveness of the promotion and incentive programs at Forts Devens and Lee, efforts at the two installations were compared. It should be noted that neither Fort Devens nor Fort Lee used the USA-CERL recommended incentive program (Appendix J); most of the emphasis at these bases has been on promoting SH. Both installations periodically give awards for the best external (lawn and garden) appearance during the summer. In addition, Fort Lee presently has a contest in which a \$50 savings bond will be awarded to the person who makes up the best name for the cartoon sergeant featured on the SH Program posters. While these incentives do promote SH participation, they are sporadic. A more comprehensive incentive program would function year-round and emphasize the internal maintenance of quarters as well as their external appearance.

In promoting the SH Program, both installations rely on advertising. Fort Devens reaches family housing occupants through cable television advertisements and "shopper" newspapers. Fort Lee reaches its occupants through the post newspaper and posters on base. Personnel at both installations feel their promotional endeavors have increased awareness among occupants.

Cost Benefit Analysis

Both installations provided data on administrative costs incurred by the SH Program. Fort Devens provided FH SH figures while the figures from Fort Lee for the FH portion of SH were extracted from total costs associated with running the combined troop and FH SH operation. Comparison of the administrative costs of SH and the labor cost avoidance figures projected from FESS records proves the cost effectiveness of the Family Housing SH Program. Fort Devens provided a cost figure for FY86 reflecting the direct labor and labor overhead costs of running the SHSC. No monthly data were supplied. Also, other administrative costs (e.g., procurement and transporting items between the main warehouse and the SH warehouse) were not provided. The total administrative labor cost of running the SHSC during FY86 at Fort Devens was \$44,356 or an average of \$3,696.33 per month. Extrapolated labor cost avoidance figures for FY86 at Fort Devens reveal that occupant performance of SH tasks saved approximately \$268,901 in PM wages. The net benefit of the program (cost savings minus administrative expenses) for the year was \$224,545.

However, this figure does not reflect the true administrative costs associated with FH self help. Most of the additional administrative expense is incurred in procuring stock for the SHSC. Along with the SHSC manager, a typist and a purchasing and contracting officer are involved in the procurement process. It has been estimated that

together, the typist and purchasing officer spend 10 hours per week on Family Housing SH activities. Using the above labor and labor burden figure for the SHSC manager, this roughly translates into an \$11,089 FY86 cost. Including this estimated cost, the approximated FY86 administrative cost of the SH Program was \$55,445 or an average of \$4,620 per month. Using this combined figure, the net benefit of the program was $(\$268,901 - \$55,445 =) \$213,456$.

Fort Lee provided the direct labor costs as well as the labor and operational overhead expenses associated with its SH Program. The labor costs included staff for the U-Do-It Center and warehouse and procurement personnel. The \$185,000 figure provided includes the labor cost and labor burden incurred by the combined FH and troop SH programs. It was not possible to determine the separate cost for each program. Fort Lee records also indicate that approximately 60 percent of all issues from the U-Do-It Center are to FH occupants. Multiplying this percentage times the combined SH labor cost would seem to yield an estimated labor and overhead cost of \$111,000 that one could associate with the FH SH program. However, records show that the average dollar value of a FH Self-Help issue is only one-tenth to one-fourth that of the average troop SH issue. This suggests that the administrative labor costs associated with operating the FH portion of the SH Program are less than \$111,000. Unfortunately, there is no method of deriving the true costs associated only with FH Self-Help when the troop and FH operations are combined.

Labor cost avoidance figures for FY86 at Fort Lee indicate that SH tasks performed by the occupant saved approximately \$135,101 in PM wages. The net benefit of the program (cost savings minus administrative expenses) for the year was at least \$24,101. Although not large, it is a savings. Certainly, improved SH participation is one method of increasing these savings. Other factors such as Fort Lee's new microcomputer-based management system may help as well. More efficient program management due to the computer may result in reduced administrative costs and improved customer service. Improved service may in turn encourage more program participation resulting in greater cost savings.

Both installations realized a net benefit from SH operations, proving that, given proper support and promotion, the SH Program is potentially cost efficient. For example, the administrative costs at Fort Devens in FY86 were about 20 percent as large as the projected potential labor cost avoidance for the year.

Alternative Approaches to Supply Delivery and Task Performance

While in many cases the most convenient and economical way of distributing SH supplies is through the SHIP, it may be more feasible to deliver frequently used SH items to quarters. When queried about this possibility, personnel at both installations responded negatively. The manager of the Fort Devens SHSC indicated that similar programs had been tried in the past and had not been very successful. For example, insect control supplies were once distributed to all occupants, but only 40 percent of these items were used. It is felt many supplies and much effort are wasted on such programs. Fort Lee had similar reasons for discounting housing-wide distribution. In addition, items which would be good candidates for disbursement (e.g., fuses and furnace filters) are being dropped from Fort Lee's supply list in favor of occupant purchase of these items.

Also as a part of its investigation, USA-CERL was specifically asked to evaluate the cost effectiveness of having supplies delivered in place by the supplier or vendor rather than issuing these items at the SHIP store. Of particular interest was the possibility of having a commercial fertilizer company fertilize the lawns of all family housing units on a base. To compare having a company apply fertilizer with having FH occupants do the work, it must be assumed that every FH unit will fertilize its lawn. However, this is not the case at any installation, as many occupants do not fertilize at all and those who do fertilize differ in the number of applications per year. The typical lawn fertilizer company makes five applications per year to a customer's lawn whereas the typical FH occupant does not. Therefore comparisons were made assuming each family housing occupant and the commercial vendor would fertilize twice per year.

Below are cost figures for both methods (occupant and vendor applied) based on data gathered from Fort Lee. Fort Devens was not included in the investigation because at the time of this report all commercial fertilizer vendors in the state of Massachusetts are being investigated by the state attorney general. It can be assumed, though, that findings at Fort Devens would be similar since fertilizer companies tend to charge similar rates around the country, and the cost of supplies are comparable at the two installations.

Cost of Commercial Vendor Applied Fertilizer:

Based on an average 4000 sq ft lawn

Discount price for two applications/yr (without herbicide or pesticide)	=	\$50.00/unit/yr
		<u>X 1459 units</u>
Total Cost	=	\$72,950/yr

Cost of Occupant Applied Fertilizer:

2 bags fertilizer/unit/yr X \$3.50/bag		
X 1459 units	=	\$10,213
Assume 375 drop spreaders bought in first year of program at \$24.00 per spreader	=	<u>\$ 9,000</u>
First Year Total Supply Cost	=	<u>\$19,213</u>
(First year only since only partial replacement of spreaders will occur in subsequent years.)		

Assume 5:1 ratio of administrative and handling costs to supply costs (i.e., 5 X Total Supply Cost = Total Cost). This ratio is typical of most SH operations.

First Year Total Cost = 5 X \$19,213	=	\$96,065/yr
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Assume 20 percent replacement of spreaders per year yielding an average spreader cost of \$1,800 per year with fertilizer costs remaining constant

Fertilizer	=	\$10,213/yr
Spreaders	=	<u>\$ 1,800/yr</u>
Total Supply Cost in Each Subsequent Year	=	\$12,013

Total Cost in Each Subsequent Year = 5 X \$12,013	=	\$60,065
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In the first year, the commercial vendor is about 25 percent less expensive than the SH alternative. Although more expensive in subsequent years, the commercial alternative may still be the better value since 100 percent coverage is guaranteed whereas not all FH occupants will participate in a fertilizing program and some may do substandard work. Note that for a little more money, the commercial vendor can also apply herbicide and pesticide. Although costs for applying herbicide and pesticide through SH were not available, it is safe to assume that this method would be less efficient and more costly than the commercial alternative. In fact, some installations, including Fort Devens, do not allow FH occupants to use toxic substances such as herbicide and pesticide.

Facilities

The Fort Lee SHIP Store

The Fort Lee SHIP, called the U-Do-It Center, is in a centrally located renovated older building constructed especially for the SH Program. Although the exterior is a bit spartan (Figure 1)*, the interior of the building is excellent. The customer areas of the SHIP resemble a commercial hardware store (Figure 2). Displays contain tools and supplies available to the FH occupants. Several mockups and demonstration areas are also included in this section for informal training purposes or general observation (Figures 3 and 4). No classroom space is included at this SHIP as Fort Lee offers no formal training to the FH occupants. Overall, the U-Do-It Center definitely helps project a positive image for the SH Program at Fort Lee. Figure 5 shows the U-Do-It Center floor plan.

The Fort Devens SHIP Store

Although not very centrally located among housing units, the Fort Devens SHIP store is efficient in the sense that it occupies a previously existing building and is near the DEH administrative facilities (Figure 6). The building is two story with reception and warehouse space on the ground level with training space above. Desirable features here include the landscaping using plants available to occupants and the conspicuous signage (Figure 7). The building's biggest drawback is its small reception area (Figure 8). Ideally, occupants could view all tools and many commonly used supplies available to them. However, lack of space precludes displays at Fort Devens (Figure 9). The Fort Devens SHIP Store may not be optimal, but it is certainly economical and functional. Figure 10 shows the SHIP Store floor plan.

Comparison of the Army SH Program to Navy and Air Force Programs

As part of the analysis of the recommendations for the Army Self-Help Program, USA-CERL was asked to compare the Army program to similar programs in the Navy and Air Force. USA-CERL personnel visited Dyess Air Force Base (AFB), TX and Naval Submarine Base New London in Groton, CT to evaluate and document their respective programs.

Although SH (especially troop SH) is becoming more important at Dyess AFB due to decreased facilities funding, its FH Self-Help Program is very limited compared to that

*Figures are located at the end of the chapter.

of the Army. Family housing operations are contracted out and materials and tools are distributed through the contractor's U-Fix-It Store. However, the store stocks only 32 items for effecting minor repairs.

Limited training of occupants is provided as part of the SH effort at Dyess. Some recognition is given for occupants' efforts, such as awards for the best yard of the month. Otherwise, program promotion and incentives for participation are negligible. Program participation is generally low. Conversely, landscaping is a real strength of this program. The U-Fix-It Store interfaces with the base SHSC to provide the FH occupants with a wide selection of shrubs and bushes to plant around their quarters. In general, though, this program does not provide a comprehensive SH Program to the family housing occupants.

Self-Help at the Naval Submarine Base New London is also less extensive than the Army's recommended program. Problems arise due to the voluntary nature of the program and the fact that command personnel place little emphasis on the program. For example, maintenance personnel will perform any task which housing occupants are unwilling to perform. The Self-Help Store is overstocked and many items remain unused. According to occupants, the store is not sufficiently staffed. The recreational equipment rental center also stocks many tools which could be considered SH items. New London's incentives and promotional efforts are limited. The major strength of this program is the effort that has been made to computerize the SH operation, specifically the inventory system. The Navy considers New London's to be a good SH operation. However, it does not provide the quality of SH that the recommended Army program should provide.



Figure 1. U-Do-It Center at Fort Lee.



Figure 2. U-Do-It service counter.

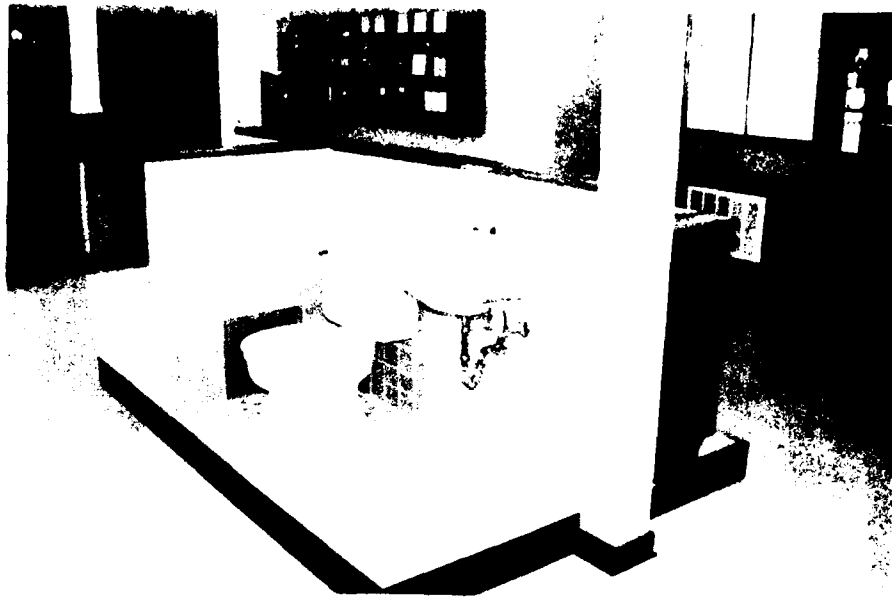
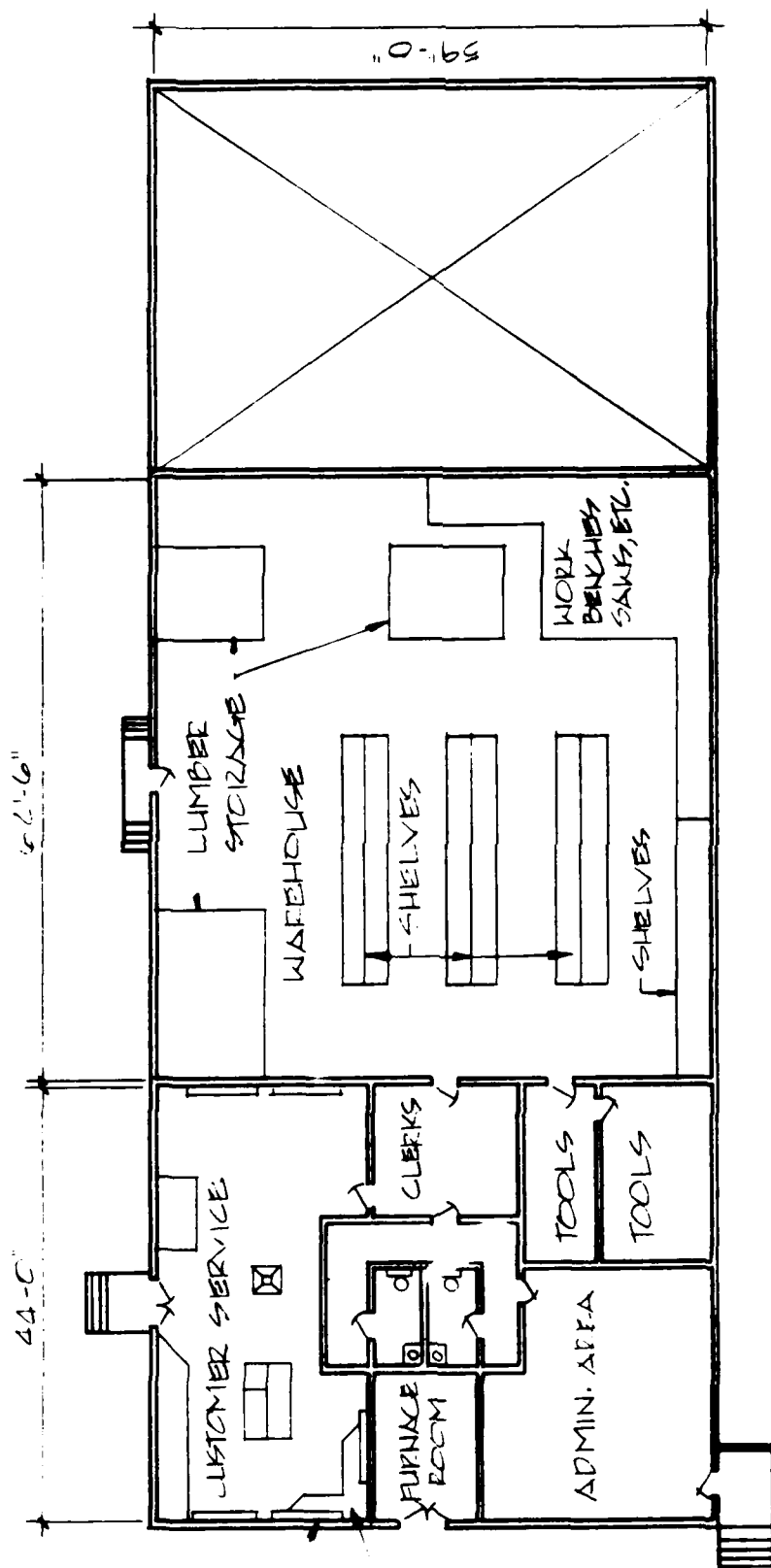


Figure 3. Mockup in U-Do-It Center.



Figure 4. Large Display in U-Do-It Center

— 7521X 14413 511 —
= JCCF 7521X —



U-DO-IT CENTER FT. LEE, VA.

SCALE: 1/4" = 1'-0"

Figure 5. U-Do-It Center floor plan.



Figure 6. Self-Help Issue Point (SHIP) store at Fort Devens.

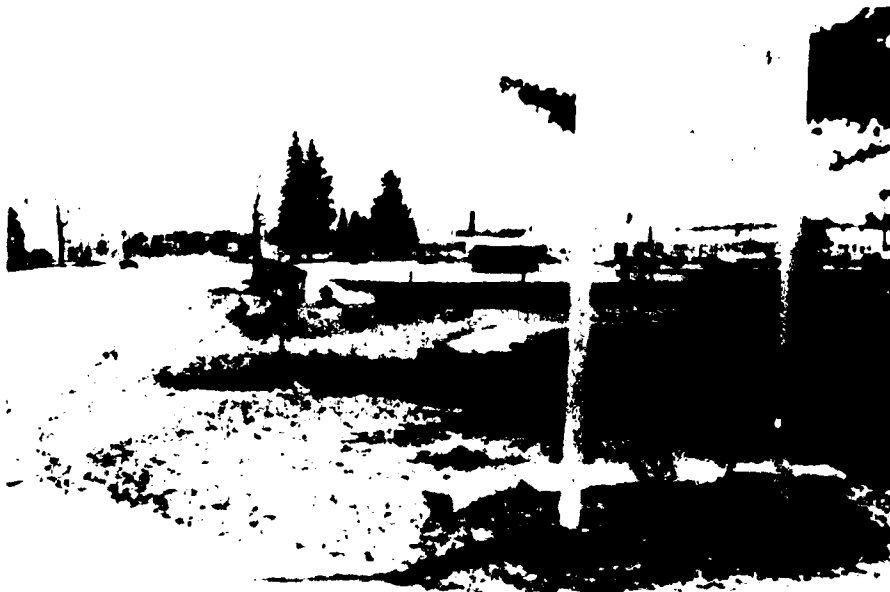


Figure 7. A conspicuous sign is a desirable feature.

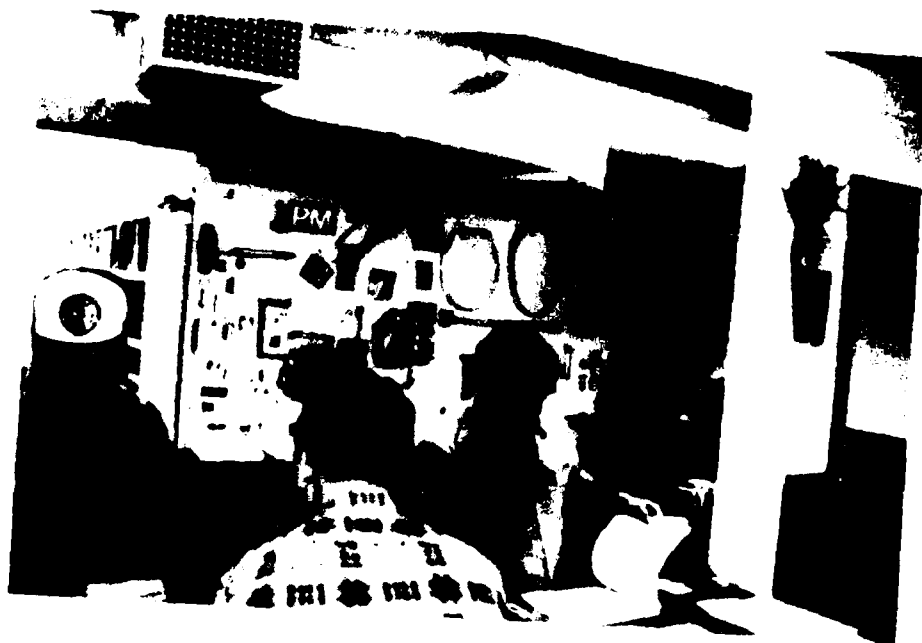
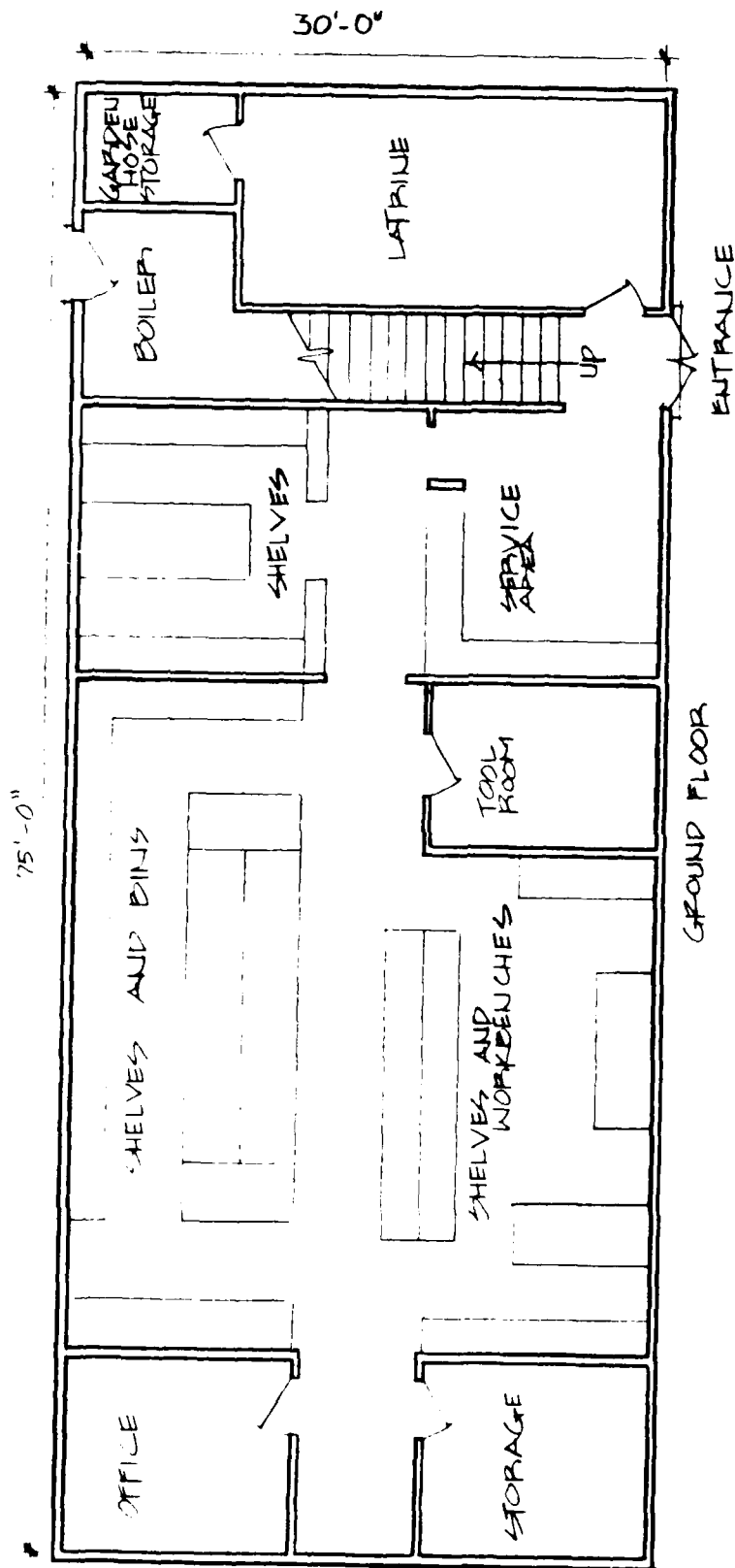


Figure 8. SHIP store service counter.



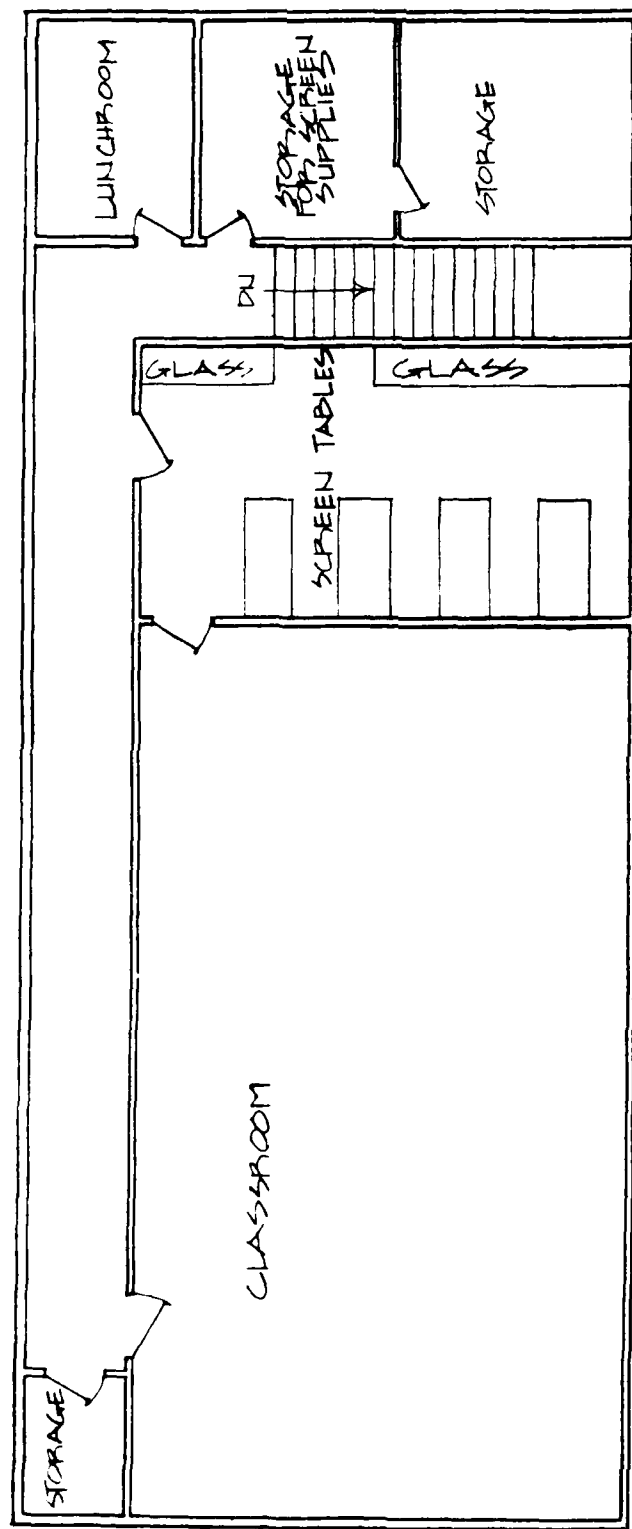
Figure 9. SHIP store repair display.



SELF-HELP SERVICE CENTERS
FT. DEVENS, MA.

SCALE: 1/8" = 1'-0"

Figure 10. SHIP store floor plan.



SECOND FLOOR

SELF-HELP SERVICE CENTER
PT. DEVENIS, MA.

SCALE 1/8" = 1'-0"

Figure 10 (Cont'd)

4 CONCLUSIONS

Cost Benefits

In general, the Family Housing Self-Help Program improvements implemented in January 1986 have proven successful. The Fort Devens Facility Engineering Supply System (FESS) Records (Appendix B) document a nearly \$37,000.00 larger cost avoidance in FY86 than in FY85. This increased cost avoidance can be attributed to greater use of the Self-Help Program in 1986.

Analysis of the Labor and Equipment Cards from Fort Devens, however, revealed that participation in the program still needs improvement. During the test period, \$25,519.10 worth of team labor was expended performing simple SH tasks (Appendix B). Through greater participation in the program, more of this expense could have been avoided.

Comparison of administrative costs incurred and estimated labor cost savings prove the cost effectiveness of the SH Program. At Fort Devens, the \$268,901 PM cost avoidance (as a result of tasks performed through the SH Program) was about five times the administrative costs (estimated \$55,445) of the program. At Fort Lee, total cost avoidance (\$135,101) was approximately 1.25 times the administrative costs (\$111,000) of Family Housing SH. The Fort Lee administrative costs provided were more encompassing than those supplied by Fort Devens, but were extracted from a contracted management study rather than from in-house analysis. This, in part, explains the differences in administrative costs between the two installations. Since these administrative costs will remain relatively constant, greater occupant participation in SH can make the program even more cost effective.

It was possible to calculate the net benefit of the program from the administrative expenses associated with SH and the labor cost avoidance resulting from the program. Subtracting the FY86 administrative costs of running the program from the labor expense saved provides a best estimate of the net value of the SH Program for the year. For Fort Devens, the result was \$213,456; for Fort Lee, it was \$24,101.

Customer Opinion

Both the FH occupants and the DEH personnel questioned had favorable opinions of the improved SH Program. Occupants were generally enthusiastic about the program and would like to see it expanded. This enthusiasm is shown by the nearly 90 percent program participation rate among occupants. Most of those surveyed at the DEH felt the program was cost effective and worthwhile and they, too, thought it should be expanded. The majority of both occupants and DEH personnel felt the SH Program helps maintain quality housing.

Operations and Management

Although overall opinions of the program were very favorable, approximately three-fourths of the occupants at each installation expressed dissatisfaction with certain aspects of the program. At both sites, program restrictions on types of allowable tasks were most frequently mentioned, followed by personnel attitudes at Fort Lee and inconvenient hours at Fort Devens. Upon inspection, none of these problems seem difficult to correct.

Some DEH personnel at both Fort Devens and Fort Lee incorrectly answered questions concerning training. For example, some Fort Lee respondents erroneously identified training as mandatory. These findings indicate that an informational bottleneck may be occurring. However, some of these errors can be explained by the fact that not all the respondents have direct ties with the SH Program.

Recommended supply, tool, and task lists were found to be adequate at both test sites. Opinion was that, if changed, they should only be expanded. Many occupants, however, indicated they were still purchasing tools and materials to perform SH tasks. DEH personnel cited a lack of complete computerization of the program as a definite drawback. A greater degree of computerization should help to maintain tool and material inventories.

Operating hours of the SHIP store were a great concern among occupants (primarily Fort Devens occupants). Ninety percent of the Fort Lee occupants and only 59 percent of the Fort Devens occupants indicated they were satisfied with the SHIP store hours. Dissatisfied occupants voiced a need for more evening and weekend hours. Fort Devens occupants cited operating hours coincident with duty hours as inconvenient for most military personnel, and noted that some spouses can not visit the SHIP during the daytime due to work or child-care responsibilities.

Fort Lee personnel estimated that the majority of loans and issues occur between 1200 and 1300 hours and between 1600 and 1700 hours. From a staffing perspective, it is impractical to keep scattered hours (i.e., open only during lunch and for an hour at the end of the day). Typically, personnel will be on duty between peak hours performing administrative tasks and may as well keep the SHIP/store open if manpower permits. Also, survey results showed a strong desire for evening and weekend hours. To accommodate occupants' wishes while keeping operating costs to a moderate level, expanded summer hours and reduced winter hours should be considered. Staying open until 1900 hours in the summer would allow the maximum number of people to use the desired lawn-care items. Occupants would be able to obtain supplies after duty hours and still have time to use tools with 2-hour loan periods. Decreased winter hours would reflect the overall decrease in SH activity during this period. Establishing dependable and desirable SHIP/store hours, will increase occupant satisfaction with the program.

Two aspects of the SH Program deserve further attention. First, many FH occupants still do not fully understand the differences between SH and PM. Increased awareness among occupants will serve to increase SH participation, resulting in further cost avoidance from the program. Second, incentives designed to increase program participation, should be emphasized as much as possible (Appendix J). Awards and recognition will serve to increase SH participation as well as sustain current levels of participation.

Training

Self-Help training class evaluations from Fort Devens indicated that the training improvements were well received. Most of the feedback was very positive. Specifically, more than 80 percent of those who filled out an evaluation felt the overall class was excellent, while more than three-fourths thought the training aids, fire department training, carpentry, plumbing, and electrical sections were excellent. However, results also revealed two aspects of the training which require further improvement. Both the energy conservation training and the training facility were given mostly average to poor ratings.

Formal training should be continued rather than on-the-spot training for the following reasons:

1. Training classes make occupants more aware of the SH Program and their role in it. Classes also ensure that all occupants have been exposed to the skills necessary to perform SH tasks. Results showed that the Fort Devens occupants were generally more informed about the SH Program. Fort Devens' occupants also responded more often that the SH Program met their needs in maintaining quality housing.
2. Labor costs will not change with or without formal training since the SHIP store manager conducts the training in either case.
3. There may be some additional initial costs associated with formal training (e.g., constructing displays and organizing demonstrations), but the thoroughness of training will probably improve the quality of work performed by the occupant and thus reduce the amount of PM team rework.
4. Most importantly, a mandatory training course will serve to introduce FH occupants to the SH Program. Thus, their interest in and support of the program will be more easily gained.

Documentation and Guidance

Several occupants commented on the outdated Handbook for Family Housing Occupants (DA PAM 210-2). They cited lack of useful illustrations and incompatibility with the current SH Program. In addition, it was noted that the illustrations vary in style and generally fail to depict the modern types of fixtures and appliances typical in contemporary quarters.

5 RECOMMENDATIONS

The following recommendations are based on the evaluation of improved SH procedures instituted at Fort Devens, MA and Fort Lee VA. These recommendations are presented to serve as guidelines for not only the two test installations, but for any Army installation planning, initiating or improving a Self-Help Program.

Organizational Structure

1. The Installation Commander should at least be briefed on, and preferably be involved in promoting the benefits of a strong SH Program, thereby assuring support for the procurement of usable facilities and promotion of incentives and awards for participation in the program.

2. Troop and Family Housing SH operations should be tracked in separate accounts. If both are operated from the same facility, FH housing occupants need to be made more aware of the differences between FH and troop SH since there are many items available to troops which are not available to FH occupants.

Operational Procedures

1. Place more emphasis on informing FH occupants of the differences between SH and PM tasks. This should help reduce occupant requests for PM personnel to perform SH tasks.

2. SHSC schedules should include evening and weekend hours. Expanded schedules of operation of the SHIP/store during high seasonal use should be included. A possible summer and winter operating schedule based on records and personnel responses from Fort Lee follows:

Summer Schedule:	Mon, Wed, Fri:	1100 - 1900
	Tues, Thurs:	1100 - 1730
	Sat:	1000 - 1600
	Sun:	1200 - 1600
Winter Schedule:	Mon thru Fri:	1100 - 1730
	Sat:	1200 - 1600

Individual installations may need to tailor a schedule to their specific circumstances.

3. SHSC staff adjustments should be made according to seasonal work loads, if necessary.

4. Promotion and incentive programs should be given as much emphasis as possible. Promotional possibilities include flyers, newspaper advertising, posters, and cable television advertising. Periodic letters to family housing occupants may also be effective. Incentives such as special privileges for outstanding quarters should be offered. All incentive programs should be linked to SH participation. See Appendix J for the USA-CERL recommended incentive program.

5. A microcomputer data base management system should be installed at the SHIP store to record inventory transactions. Standard reports from the system should include reorder points, use of materials by building number, records of equipment loans, and customer activity during specified operating periods. Occupant information should include SH training status, if applicable, and expected date of termination of occupancy. Additionally, the system should include a complete inventory (e.g., type of furnace and appliances) of each housing unit. Fort Lee has developed a system similar to the above recommendation.

6. Installations should expand the list of permanent equipment issues to include the most commonly requested items.

7. DEH administrative and PM personnel should be fully briefed on SH procedures and operations. They must be able to recognize and address occupant's dissatisfaction and give accurate and complete information.

8. Issuance of tools and materials in violation of regulations should be halted immediately. (Note that regulations may vary from district to district. For example, distributing light bulbs for nonpublic spaces and appliances is illegal in some locations [e.g., Military District of Washington]).

9. When an occupant admits to damaging an item or such damage can be proven, the occupant should be billed promptly, and in order to expedite the collection of damage charges, the SHIP store should handle the billing and collection of these amounts. The present system of billing and collection is cumbersome and inefficient since it is performed by several offices other than the SHIP store.

10. For those occasions when requested supplies are out of stock, a system should be instituted for notifying an occupant when the materials are again available. Having occupants fill out an index card to leave at the SHIP store is a simple and inexpensive method which would solve the problem. Supply and tool inventories should be monitored very carefully to ensure the availability of all materials and equipment.

Training

1. Formal training, rather than on-the-spot training, should be implemented.

2. The energy conservation segment of the SH training course should be re-evaluated and improved where possible.

3. Training courses should be held during off-duty hours to avoid work and child-care conflicts.

Documentation and Guidance

1. The Handbook for Family Housing Occupants (DA PAM 210-2) should be rewritten. The new version of the Handbook should include the following:

a. a complete list of required tasks and available tools and supplies for easy reference,

b. a description of the differences between SH and PM, and a discussion of how participation in SH will benefit them as FH occupants,

c. better quality illustrations and additional illustrations which depict tools being used to dismantle, repair, and reassemble items; illustrations should depict contemporary fixtures and items present in most quarters,

d. suggested cleaning and maintenance intervals for items such as furnace filters,

e. a list of recommended reference materials available at the SHIP store,

f. a description of incentives and awards available through participation in the SH Program,

g. a depiction of both interior and exterior tasks,

h. a consistent style and professional quality,

i. the provision for each installation to expand or amend the document to provide for individual needs due to climate, geography and mission, and

j. additional attention to tasks traditionally posing the greatest difficulty.

2. Greater use of additional reference materials by program participants should be emphasized. See recommended reference materials in Appendix D.

LIST OF ACRONYMS

AR	Army Regulation
DA	Department of the Army
DEH	Directorate of Engineering and Housing
FESS	Facility Engineering Supply System
FH	Family Housing
L&E	Labor and Equipment
PAM	Pamphlet
PM	Preventive Maintenance
SH	Self-Help
SHIP	Self-Help Issue Point
SHSC	Self-Help Service Center
TB	Technical Bulletin
USA-CERL	U.S. Army Construction Engineering Research Laboratory

APPENDIX A:

THE SELF-HELP TEST PLAN*

1 INTRODUCTION

BACKGROUND: As part of the development of the Family Action Plan, USA-CERL was tasked with evaluating and recommending improvements to the Family Housing Self-Help Program. An improved Self-Help (SH) Program is expected to reduce the number of service calls performed by Preventive Maintenance (PM) teams, thus allowing a savings of labor expense. In addition, improving the response to the occupants' needs will allow for faster repairs and a better occupant attitude. The study plan requires a field test and evaluation of the recommendations during FY 86. Program evaluations and recommendations are scheduled for publication.

PURPOSE: The purpose of the test is to determine the validity of recommendations developed as a result of a survey of providers and users of the SH Program. The feasibility of the recommendations and the effort required to implement them will be determined through the use of this test plan. The test plan provides guidance for USA-CERL and Fort Lee personnel for the management and technical effort during the test. It communicates to users the nature and extent of the test, coordinates an orderly schedule of events, serves as reference for test procedures and communication, and provides for a written record of the test. The test plan also provides guidance for evaluating the recommendations.

REFERENCES:

1. AR 420-22 Preventive Maintenance and Self-Help Programs
2. AR 210-50 Family Housing Management
3. TB ENG 402 Self-Help Program
4. DA PAM 210-2 Handbook for Family Housing Occupants

TERMS AND ABBREVIATIONS:

USA-CERL	U.S. Army Construction Engineering Research Laboratory
SO	Service Order
SH	Self-Help
SHIP	Self-Help Issue Point
SHSC	Self-Help Service Center
DEH	Directorate of Engineering and Housing
FH	Family Housing
FE	Facilities Engineer
FESS	Facilities Engineering Supply System
FEJE	Facilities Engineer Job Entry
IFS	Integrated Facilities System
L&E	Labor and Equipment
PM	Preventive Maintenance
STANFINS	Standard Army Finance System
tbd	to be determined

*The test plan is identical for both installations. Fort Lee's test plan is provided as an example.

2 PRETEST ACTIVITY

Prior to field testing the SH recommendations, USA-CERL conducted several site visit evaluations and a questionnaire survey of Family Housing occupants at 12 installations. The results from the questionnaires and site evaluations, and the data collected through telephone interviews were used to develop recommendations for improvements to the SH Program.

A historical baseline for comparison has been constructed through a review of past service orders, self-help costs, and operating procedures.

The level of acceptance of existing SH programs indicates that there is a great potential for establishing an improved program and a cost-effective methodology for improved quality of Family Housing throughout the Army.

3 TEST PLAN

GENERAL: Fort Lee, with USA-CERL assistance, will implement the self-help recommendations provided in the Annex [p 48]. These recommendations cover the following topics: organizational structure, operational procedures, training, and documentation. Existing self-help facilities and report forms will be used; however, existing facilities will be expanded to comply with the recommendations. New procedures will be instituted as detailed in the Appendix with any necessary adjustments being made as needed during the test. [Additional supplies and equipment will be procured by installation as detailed in Appendix I of this report.] USA-CERL will provide technical guidance and observe, evaluate, and document the implementation and operations.

TEST LOCATION: Fort Lee, VA.

TEST DATA: Test data will consist of material, labor, and equipment cost data collected by Fort Lee personnel after implementing the self-help recommendations. The data requirements are described later in this chapter under Documentation. Data provided to USA-CERL will not be retained after the USA-CERL project report is completed.

SCHEDULE: Figure A1 presents USA-CERL's network for the SH test plan. The test will be implemented in March 1986 and continue for 6 months or until a mutually agreed-upon termination date. There will be three phases to the test: system implementation and training of Fort Lee personnel by USA-CERL personnel, testing period (including data collection and documentation of procedures), and documentation of results by USA-CERL personnel. Data collection procedures will be finalized during implementation. A normal mode of operation will be established based on the recommendations provided in this plan and Fort Lee standard operating procedures as soon as possible or no later than April 1986. USA-CERL representatives will meet with Fort Lee personnel bimonthly or as needed to provide assistance and monitor and discuss the progress of the test. It will be necessary to allocate some time to administer site visits. Printouts of cost data reports will be transmitted to USA-CERL on a monthly basis. Time data will be handled in the same manner.

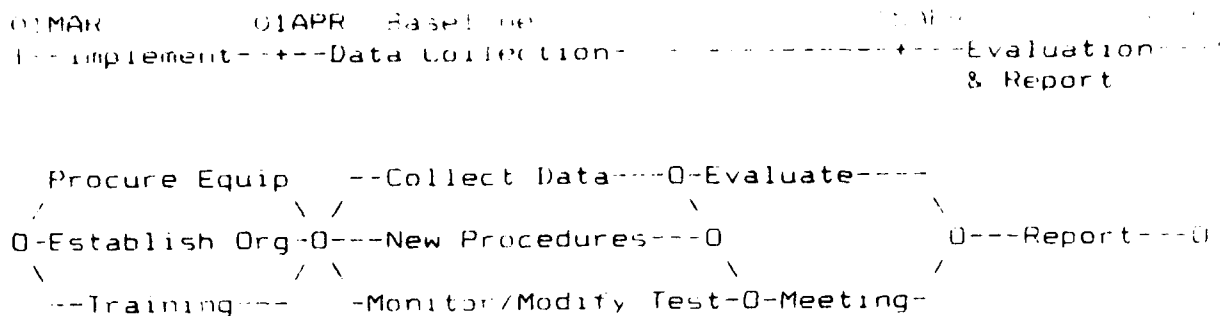


Figure A1. Milestone chart.

PERSONNEL: When possible, the test will be performed using Fort Lee personnel. However, it may be necessary to obtain additional assistance to support special activities such as public relations and promotion of the SH Program.

SITE VISITS: Fort Lee will designate a point of contact to coordinate site visits. The test will be monitored by OCE, FORSCOM, TRADOC, Fort Lee, and USA-CERL. USA-FESA personnel may observe the test for commercial activities impact. USA-CERL should be notified prior to a site visit of any organization so arrangements can be made for USA-CERL personnel to make a coincident site visit.

SUPPLIES: A recommended list of self-help items is provided [in Appendix I]. These items will be stored at and distributed through the Self-Help Issue Point (SHIP) store. Some items should be considered for alternate sourcing. For example, delivery-in-place may be a better method of dispersing fertilizer than the method currently used. Similarly, supply of some items may be better handled through the use of BPAs or contracts with local vendors. Occupants would go to the merchant to receive the items. These possibilities will be examined during the implementation phase.

MATERIALS: It may be necessary to obtain additional materials in order to comply with recommendations made for the training course [Appendixes D, E, and F]. Effort should be made to obtain the reference materials [recommended in Appendix D] no later than 15 April 1986.

SITE REQUIREMENTS: Fort Lee will provide an existing SHIP store that can be expanded. Adequate training facilities should be located at the SHIP store or within easy walking distance. The room should have seating for 30 with adequate lighting, rest rooms, electrical and plumbing displays, and items such as telephone service. Personnel involved with self-help activities should be located in the same area.

DOCUMENTATION

a. Fort Lee Personnel Responsibilities

Fort Lee will record the labor hours and effort needed to implement and conduct the SH test. This data will be collected using existing forms such as the L&E cards used for the IFS system. Direct and indirect costs attributable to SH activities, including labor, materials, and facilities costs, will be recorded at appropriate intervals, consolidated, and transmitted to USA-CERL on a monthly basis. An appropriate

recording interval for labor and material costs is daily, whereas overhead will be calculated monthly. The FH budget clerk or an appointed assistant will be responsible for collecting and consolidating the data. Innovative procedures implemented during the test will be documented. Time, personnel, and costs associated with each new activity will be documented and provided to USA-CERL as appropriate.

Site visits will be recorded and documented by the appointed point of contact. Visits by representatives of the MACOM, OCE, FESA, and other government agencies should be documented as brief reports formatted similar to trip reports submitted upon return from TDY. These reports should be included with the monthly cost reports for transmittal to USA-CERL.

b. USA-CERL Personnel Responsibilities

If necessary, new data collection forms will be developed by USA-CERL during the implementation phase. At present, the need for new forms is not anticipated, however a review of existing recording procedures will be conducted to ensure the adequacy of existing data collection tools with respect to the analytical needs of this test. The format for transmittal of cost data will be determined before implementing the recommendations. Time, personnel, supply, and equipment cost data will be documented at the end of the test and analyzed by USA-CERL. The recommended operational procedures and modifications to organizational structure and methods will also be evaluated.

PROCEDURES

A. General

Existing manpower, resources, and operating procedures will be used. Modifications in operating procedures, such as new inventory control methods, are anticipated. For example, unless an alternate method is in place, the SHIP store clerk(s) will be responsible for maintaining a running tally of items issued to occupants. At the end of every month, this will be summed to obtain a monthly material cost for SH and forwarded to the Housing Division. If the inventory is computerized, this will require very little effort. Inventory costs will be kept in FESS. This will allow costs allocated to Housing for SH to be tracked through the appropriate service order (SO) and phase code. The work needed to implement the test and collect and consolidate the data will be done in addition to the current work load. Extra work due to the test, such as ordering or developing a new lesson plan, will be fit into the normal work routine without disruption to existing service. Close coordination with Assignment, Termination, and Work Reception processing will be established for purposes of documenting the progress of the implementation of the SH recommendations. A list of SH tasks will be provided to the SO work receptionists. One hour of training or discussion with the receptionists will be scheduled during test implementation. Service orders which contain items on the recommended self-help task list will be retained for analysis by USA-CERL.

b. SHIP Store Procedures

Individualized training at the SHIP store for specific tasks should be provided to FH residents upon requests. Additionally, operational hours should be scheduled to include evening and weekend hours. Suggested hours are Tuesday through Saturday from 0800 to 2000 and Sunday from 1130 to 2000. These hours reflect responses from occupants. Actual store use will be observed to determine optimum operational hours.

ORGANIZATIONAL STRUCTURE

Family Housing Self-Help should be incorporated with the PM branch operational structure as a separate shop or part of a shop dedicated to Family Housing, unless the current organizational structure precludes such an arrangement. However, it is strongly recommended that the SHIP store be staffed by personnel with experience in maintenance and repair activities.

To improve communication between FH occupants and SH personnel, housing area mayors will be established as a feedback mechanism to gather comments and suggestions. The Family Housing manager will appoint an individual to coordinate the establishment of this program. Each housing area will elect a mayor, usually the spouse of a service member, who will be responsible for acting as a liaison between the family housing occupants and housing and maintenance providers such as Housing officials, PM representatives, and the installation commander. The appointed coordinator will be responsible for setting a permanent schedule of monthly meetings between the aforementioned parties. The coordinator will be trained regarding the responsibilities of the mayors so that he/she will be able to provide training to the mayors in the future.

ANNEX:

TEST PLAN RECOMMENDATIONS

Organizational Structure

1. **Operational Framework:** The Family Housing SH operation should be incorporated into the PM Branch operational structure as a separate shop or part of a shop dedicated to Family Housing, except where maintenance and repair are performed under contract.
2. **Physical Structure:** The SHIP store and training site should be located together or within walking distance of each other in a location convenient to the occupants. All other SH activities and personnel should be located in one area, preferably one centrally located among the housing areas.
3. **Staffing:** Existing staff will be used.
4. **Feedback:** Feedback mechanisms, such as housing area mayors, should be established to gather comments and suggestions. The mayors should meet with the installation commander on a regular basis, perhaps monthly or bimonthly. The mayors will also be responsible for helping to implement the incentive program.
5. **Supplies:** Troop and Family Housing SH supplies should be separate.

Operational Procedures

1. **Special Assistance:** In addition to the required training course, individualized instruction for specific tasks should be provided at the SHIP store to FH residents on request.
2. **Service Orders:** SOs which contain work on the recommended SH task list will be retained for analysis by USA-CERL. The list of recommended tasks will be provided to the SO work receptionists. One hour of training or discussion with the receptionists will be scheduled during implementation of the test.
3. **Documentation:** Labor and Equipment Utilization Cards will be used to document all time and costs associated with the SH test. Innovative procedures devised and implemented during the test by installation personnel will be documented, detailing the procedures used. FESS will record inventory costs.
4. **SHIP Store Hours:** SHIP store operational hours will be scheduled to include weekend and evening hours as follows:

Tuesday thru Saturday	0800 - 2000
Sunday	1130 - 2000
5. **Incentives:** An incentive program for FH occupants will be established [as described in Appendix I.] It will also be important to foster command support for the SH Program. A method of ensuring this would be to establish a MACOM-wide competition among DEH organizations, such as that currently employed within TRADOC.

Training

The following activities will be included during the required occupant training course:

1. Hands-on training
2. Demonstrations
3. Hand-outs
4. Issuance of Army publications including DA PAM 210-2
5. Representatives from the Housing Division, Fire and Safety, and other DEH shops should participate in the training.
6. Administration of evaluation forms to the occupants being trained, at the conclusion of each training session.

USA-CERL personnel will be responsible for helping to develop the modified training course and the requisite materials. In addition, USA-CERL will analyze the evaluation forms to determine the effectiveness and adequacy of the new training program as perceived by the trainees.

Documentation

The following books and pamphlets will be provided for checkout from the SHIP store as additional references. The SH document evaluation form [Appendix E] should accompany each book.

1. *The Homeowner's Complete Manual of Repair & Improvement*, Ed. Allen D. Bragdon, Arco Publishing, Inc., New York, N.Y., 1983.
2. *Complete Guide to Home Repair, Maintenance, and Improvement*, Better Homes and Gardens, Meredith Corporation, Des Moines, Iowa, 1980.
3. *Consumer Guide Fix-It*, Publications International, Skokie, Illinois, 1976.

APPENDIX B:

FESS RECORDS AND LABOR AND EQUIPMENT DATA

THE WAGE RATE APPLIED IN THIS ANALYSIS OF FT. DEVENS FESS DATA IS \$19.00 PER HOUR. THE FY86 VALUES SHOWN ARE TOTALS FOR THE FIRST TEN MONTHS OF THE YEAR. THE NUMBER IN PARENTHESES BESIDE THE TOTAL FOR EACH CATEGORY IS THE TWELVE MONTH TOTAL EXTRAPOLATED FROM THE DATA.

CARPENTRY		FY85			FY86		
ITEM	OCCURRENCES	EST.		LABOR COST AVOIDED	EST.		LABOR COST AVOIDED
		TASK COMPL.	TIME		TASK COMPL.	TIME	
BRACKET, C	50	1		\$ 350			
WIRE, FABRIC	44	1		336	58	1	1,102
SCREENING, FIB.	10	1		190	4	1	76
HOOK & EYE	61	1		1,159	130	1	2,470
HINGE, TEE, S	7	1		133	28	1	532
BOLT, BARREL	1	1		19	54	1	1,026
HASP, HINGED	24	1		456	42	1	798
HINGE, CAR	29	1		551	12	1	228
DOOR SAYER	20	0.5		190			
STOP DOOR*	500	0.5		4,750	675	0.5	6,413
RUBBERS, R.	148	1		2,812	127	1	2,413
HINGE, BUTT	22	1		9,196	18	1	342
HOOK, SCREW	200	0.5		1,900			
GUIDES, RY	60	1		1,140			
CLOSER, DOOR	157	1		2,983	155	1	2,945
LIFT BASH 4"	130	0.5		1,235			
PASTE, SPACKLE	234	1		4,446	264	1	5,016
ROD, TRAVE.	244	1		4,636	80	1	1,520
SHADE 32 1/2"*	136	1		2,584			
SHADE 41"*	988	1		16,872	957	1	18,183
SLIDE, TRAVE.	1000	1		2,318	500	1	9,500
ROD, CL. EX	58	1		722			
SHADE 33 1/2"*	49	1		931	40	1	760
SHADE MOLITE*	2227	1		42,313	1823	1	34,637
MAIL BOX	20	1		760	420	1	7,980
COMPOUND, SLA.	3	1		57			
SPACKLING COM	33	1		1,577	20	1	380
LUBRICANT, AL	2	1		38			
OIL, LUBRICANT	3	1		57	8	1	152
OIL, HOUSEHOLD	5	1		95			
TAPE, MESH, NY	6	1		114			
REMOVER, R.	9	1		171	15	1	285
CLOSER, SCREEN					10	1	190
HINGE, STRAP					6	0.5	57
HINGE, PRIME					6	0.5	57
PULL, SCREEN					20	0.5	190
STRIKER, FOR					20	1	380
BUMPER, DOOR					70	1	1,330

STEEL WOOL	4	1	76
LUMBER 1"X	46	1	874
PASTE, SPACKLE	264	1	5,016
ADHESIVE, PAN	5	1	95
INSTANT CLEAN	205	1	3,895
SEALING, CON	24	1	456
SHEET PLASTI	1	1	19
SEALER, FLOOR	1	1	19
SPLINE, PLASTI.	3	1	57
FASTENER, SAS	24	1	576
SAND PAPER	2	1	38
GI ROD, TRAVERS.	80	1	1,520
SHADE, NEOLITE*	31	1	589
SHADES, 35"X 6*	40	1	760
SHADES, 35 1/2"X*	198	1	3,762
SEALER, TILE	204	1	3,876
DRESSING, TILE	204	1	3,876
WIRE TIE #1	2	1	38

SUBTOTAL \$ 106,191

SUBTOTAL \$ 143,228 (171,374)

* Occurrences shown are adjusted from actual issues which would have included items issued for scheduled renovation of quarters and/or changes of occupancy.

ELECTRICAL				FY85			FY86		
ITEM	OCCURRENCES	TIME	COST	OCCURRENCES	TIME	COST			
SEALER, ELEC. D	500	0.5	\$ 4,750						
FUSE TRONS	16	0.5	152	16	0.5	\$ 152			
RECEPTACLE, C	1	1	19						
RECEPTACLE, P				5	1	95			
PLUG, CORD, CA	4	1	76	16	1	304			
CONNECTOR	4	1	76						
CONNECTOR, AN				2	1	38			
CONNECTOR, RA				112	1	2,128			
ADAPTER, 3 WI	6	0.5	57	40	0.5	380			
INSULATION	446	1	8,474	240	1	4,560			
PLATE, WALL	825	0.5	7,838	190	0.5	1,805			
PLATE, ELEC	2	0.5	19						
COVER, DUP	600	0.5	5,900						
COVER, PLATE	500	0.5	4,750						
PLUG, SAFETY	500	0.5	4,750						
FIXTURE, FLUOR.	1	1	19	9	1	171			
FIXTURE, ELEC.				2	1	38			
GLOBE, REP.	266	0.5	2,527	156	0.5	1,482			
PRESCOLITE	30	1	570						
GLOBE, FOR, THO	25	0.5	238						
PUSHBUTTON, DO	250	1	4,750						
CORD, UTILITY				12	0.5	114			
PLATES, PULL				1	0.5	19			
FUS TATS, 20A				16	0.5	152			
FUSE PLUG				40	0.5	380			
FUS TATS, 30A				16	0.5	152			

SWITCH, TOGGLE	20	1	380
SWITCH, ELEC	4	1	76
PLUG, ADAPTER	20	0.5	190
RECEPTACLE, P	5	1	95
SOCKET, WEATH	2	1	33
SWITCH, DUPL	50	1	950
12 BALLAST, LA	4	1	76
FUSE, 15A, TIME	97	0.5	922
PLATE, WALL, SING	14	0.5	133
LENS, PRISMATIC	3	0.5	29
LAMP, ELEC**	2	0.5	19
Buzzer, MONAD	2	1	38
BELL & BUZZER	1	1	19

SUBTOTAL \$ 48,984

SUBTOTAL \$ 19,079 (22,895)

** Except for appliance lamps, all lamps have been excluded since their issue is expressly forbidden at certain installations.

PLUMBING		FY85		FY86		
ITEM	OCCURRENCES	TIME	COST	OCCURRENCES	TIME	COST
SEAT, WATER CL	163	1	\$ 3,097	148	1	2,912
SHOWERHEAD	70	0.5	665	80	0.5	3,200
STOPPER, WASTE	126	0.5	1,197	36	0.5	342
STOPPER, BASIN	28	0.5	266			
SHUT-OFF, HAND	3	1	57	41	1	779
AERATOR, BUBBLE	35	1	665			
AERATOR, F	100	1	1,900	200	1	3,800
WIRE, LIFT, T.	130	1	2,470	100	1	1,900
LEVER, TANK	29	1	551	10	1	190
SOAP DISH, BR	345	1	6,555			
FLOAT VALVE	11	1	209	10	1	190
AERATOR, BOTT	25	1	475			
TANK BALL	36	1	684	24	1	456
TOWEL BAR	350	1	6,650			
STRAINER	200	1	3,800			
ROLLER, TO	200	1	3,800			
HOLDER, TO	500	1	9,500			
POP-UP	200	1	3,800			
STOPPER, 4	200	1	3,800			
WASHER	601	0.5	5,710	155	0.5	1,473
DRAIN, BAT & TUB	261	1.5	7,439	304	1.5	8,664
TANK, SUPPLY				11	1	209
SPEUT, DIVERT				10	1	190
FLAPPER, CORN				10	1	190
COUPLING HOSE				240	1	4,560
ENDER HOSE				240	1	4,560
TUBE, REFILL				25	1	475
TUBES, OVERFL.				10	1	190
FACE PLATE, WSEA				10	1	190
HEAD, RINSE, GU				5	1	114

FY85

FY86

NIPPLE PIPE	2	1	38
ELBOW PIPE	1	1	19
HOSE COUPLINGS	150	1	2,950
HOSE MENDERS	150	1	2,850
CONNECTOR HOSE	25	1	475

SUBTOTAL \$ 63,290

SUBTOTAL \$ 40,716 (48,859)

HVAC

FY85

FY86

ITEM	OCCURRENCES	TIME	COST	OCCURRENCES	TIME	COST
FILTER, AI	400	0.5	\$ 3,800			
PAD, REFILL, HU	24	0.5	228	200	0.5	1,900
TAPE, DUCT	1	1	19	5	1	95
HUMIDIFIER	46	0.5	456	178	0.5	1,691
WEATHERSTRIP	60	3	3,420	272	3	7,552

SUBTOTAL \$ 7,923

SUBTOTAL \$ 11,238 (13,486)

SECURITY

FY85

FY86

ITEM	OCCURRENCES	TIME	COST	OCCURRENCES	TIME	COST
LOCK, PADLOCK	2	0.5	\$ 19	8	0.5	\$ 76
LOCK SET, EXT	5	1.5	143			
LOCK, PRIVACY	2	1	38	5	1	95
LOCK, SECURITY	137	1.5	3,905	110	1.5	3,135
15 KNOB-LATCH	100	1	1,900	75	1	1,425
BOLT, CHAIN				13	1	247
LOCK, DEAD				1	2	38
LATCH, KNOB				50	1	950
LATCH, PASSAGE				5	1	1,425

SUBTOTAL \$ 6,005

SUBTOTAL \$ 7,391 (8,869)

GROUNDS MAINTENANCE FY85

FY86

ITEM	OCCURRENCES	TIME	COST	OCCURRENCES	TIME	COST
SAFROTIN				10	1	190
GENCOR				10	1	190

SUBTOTAL \$ 380 (456)

PEST CONTROL	FY85			FY86		
ITEM	OCCURRENCES	TIME	COST	OCCURRENCES	TIME	COST
TRAP, MOUSE				16	0.5	152
D. PHENOTHRIN				200	0.5	1,900
						SUBTOTAL \$ 2,052 (2,462)
FY85 TOTAL \$ 232,303			FY86 TOTAL \$ 224,084 (268,901)			

NOTE: Some total occurrence values may seem high upon first inspection (e.g. shades and door stops) but it must be remembered that there are 1725 FH units at Ft. Devens. Also, keep in mind that some of these items are typically replaced in groups (e.g. door stops). These records indicate that most items are lasting six or more years which would be considered quite commendable for any rental housing.

THE WAGE RATE APPLIED IN THIS ANALYSIS OF FT. LEE FESS DATA FOR FY96 IS \$16.69 PER HOUR. THE VALUES REPRESENT ONLY THE FIRST 10 MONTHS OF FY96. THE NUMBERS IN PARENTHESES ARE TWELVE MONTH TOTALS EXTRAPOLATED FROM THE TEN MONTH DATA.

CARPENTRY

ITEM	OCCURENCES	TIME	COST
CORD, SASH (cl. line)	1067	1	\$ 17,308.23
BOLT, TOSGLE	22	1	367.18
SCREW, LAG, BOLT	16	1	267.04
CLOTH, WIRE, SCREEN	142	1	2,369.98
PATCHES, SCREEN	37	1	617.53
HOOK & EYE	16	1	267.04
CLOSER, DOOR	26	1	433.94
HINGE, STRAP	3	1	50.07
HINGE, BUTT	17	1	283.73
HINGE, TEE	7	1	116.83
BOLT, BARREL	21	1	350.49
HASP, HINGED	8	1	133.52
SHADES, WINDOW	294	1	4,906.86
DRYER, CLOTHES	10	1	166.90
ANCHOR, PLASTI.	17	0.5	141.87
ABRASIVE PAPER	63	0.5	525.74
HANGER, PICTURE	37	0.5	308.77
STOP, DOOR, RUB	323	0.5	2,695.44
STOP, DOOR, HAL	2	0.5	16.69
SHADE BRACKET	36	1	600.84
DOOR GUARD, BR.	26	1	433.94
PULLS, CABINET	22	0.5	183.59
FIN ON HOOKS	5	1	83.45
MAGNETIC CATCH	5	0.5	41.73
HINGE, SCREEN	1	1	16.69
PULLS, SCREEN	11	0.5	91.30
HOOK, COAT AND	29	1	484.01
DOOR SWEEPER	1	1	16.69
ABRASIVE, LIQUID	34	1	567.46
CURTAIN ROD	397	1	6,625.93
CURTAIN, CARPI.	4	1	66.76
WOOD, PLASTIC	9	1	150.21
PASTE, BASKET	8	1	133.52
CAULKING, 10. S.	9	2	300.42
PLTTY, STAINLESS	2	1	33.38
COMPOUND, JOINT	7	1	116.83
SPACKLING, DAPP	35	1	584.15
SPACKLING, PAS.	16	1	267.04
GLAZING COM	3	1	50.07
ADHESIVE, GLUE	19	1	317.11
CLOTHESLINE, WHK	4	1	65.76
BOLT, STOVE, F	1	1	16.69
BOLT, CARRIAGE	16	1	267.04
WINDOW HANDLE	1	1	16.69

HINGE, CABINET	1	1	15.69
SCREEN, WINDOW	71	1	1,184.99
SUBTOTAL CARPENTRY			\$ 44,562.33 (\$53,424.90)

ELECTRICAL

ITEM	OCCURENCES	TIME	COST
COVERS, FLOOR., L.	1	0.5	\$ 3.35
FUSE PLUG	11	0.5	91.95
FUSETRON	11	0.5	91.95
FUSE CARTRIDGE	8	0.5	66.76
RECEPTACLE, ELEC.	3	1	50.07
PLATE FOR FLU.	6	1	100.14
PLATE, COVER, U.	2	0.5	15.69
PLATE, RECEPTA.	15	0.5	125.18
COVER, RECEP, S	2	0.5	15.69
PLATE, SWITCH	29	0.5	242.01
PLATE, WALL, ELEC.	35	0.5	292.08
PLATE, OUTLET	4	0.5	33.38
GLOBE, GLASS	27	0.5	225.32
SHADE, GLASS	36	0.5	300.42
GLOBE, (ONLY)	3	0.5	25.04
GLOBE, CRYSTAL	18	0.5	150.21
GLOBE, F SEABO.	3	0.5	25.04
LAMP, OPEN	42	0.5	350.49
FUSE, PLUG, 125	2	0.5	16.69
FUSETRON, CARTRIDGE	4	0.5	33.38
SUBTOTAL ELECTRICAL			\$ 17,816.92 (\$21,380.30)

PLUMBING

ITEM	OCCURENCES	TIME	COST
SEAT, WATER CL	19	1	\$ 317.11
SHOWERHEAD	6	0.5	50.07
STOPPER, BASIN	11	0.5	91.80
STOPPER, SINK	11	0.5	91.80
BAR, TOWEL, 18"	9	1	150.21
BRACKETS, TOWEL	14	1	233.66
HOLDER, TOOTHBR.	7	1	116.83
FAUCET, LAVATORY	1	1	16.69
DISH, SOAP, WALL	12	1	283.73
HOLDER, TUMBLER	12	1	200.28
HOLDER, TOWEL	5	1	93.45
BAR, TOWEL	12	1	200.28
SOAP DISH	6	1	100.14
HOLDER, TOILET.	22	1	367.18
BAR, (SOAP) GRE	2	1	200.28
ESCUTCHEON	2	0.5	15.69
HANDLE, FAUCET	5	0.5	41.73
REPATOR, FAUCET	14	1	233.66

ROLLER, WOOD	6	1	100.14
BALL COCK	20	1	333.80
HOSE & SPRAY	4	1	66.76
STRAINER BASKET	21	1	350.49
BALL, TANK, FL.	8	1	133.52
SHOWER ROD &	14	0.5	116.83
COUPLING 5/2"	22	1	367.18
CLAMP, RFR, HAT	2	1	33.38
WASHERS	34	0.5	700.98
CURTAIN, SHOWER	29	0.5	242.01
CAULKING, TUB	42	1.5	1,051.47
SUBTOTAL PLUMBING \$ 6,008.42 (\$7,210.10)			

PAINTING

ITEM	OCCURENCES	TIME	COST
PAINT THINNER	45	1	755.05
POLYURETHANE	12	1	200.28
PAINT, MASONRY	9	1	150.21
PAINT, QUICK D.	108	1	1,802.52
PAINT, EXT. MYS.	1	1	16.69
PAINT (ALL COLORS)	259	1	4,322.71
STAIN, HI GLOSS	1	1	16.69
SUBTOTAL PAINTING \$ 7,236.84 (\$8,716.61)			

HVAC

ITEM	OCCURENCES	TIME	COST
FILTERS, 16 1/2	8	0.5 \$	66.76
FILTERS, 20X	24	0.5	200.28
FILTERS, 9 1/2	10	0.5	83.45
SUBTOTAL HVAC \$ 350.49 (\$420.59)			

SECURITY

ITEM	OCCURENCES	TIME	COST
KNOB, POLISHED	8	0.75\$	100.14
LATCH, SCREEN	38	1	634.22
LOCK, EXTERIOR	1	1.5	25.04
KNOB SET, JAPA.	1	1.5	25.04
LOCK, BACK, SET	1	1.5	25.04
LOCK, BEDROOM	2	1.5	50.07
LATCH, NIGHT	2	1	33.38
SUBTOTAL SECURITY \$ 892.93 (\$1,017.52)			

GROUNDS MAINTENENCE

ITEM	OCCURENCES	TIME	COST
LIME, FINISHING	5	1	\$ 83.45
ASPHALT EMULSIFIER	19	1	317.11
SEED, GRASS,	120	2	4,035.50
MULCH, FINE BARK	76	1	1,268.44
CERCIS CANDENS	146	2	4,873.48
SHRUB, ILEX COMP.	500	2	16,670.00
SHRUB, FLEX HOMA	50	2	1,669.00
SHRUB, LIRIOPE	654	2	21,830.52
SUBTOTAL GROUNDS MAINTENENCE \$ 50,737.60 (\$60,885.12)			

PEST CONTROL

ITEM	OCCURENCES	TIME	COST
SPRAY, INSECT	32	1	\$ 534.03
SUBTOTAL PEST CONTROL \$ 534.08 (\$640.90)			

**TOTAL COST SAVINGS FOR FIRST
10 MONTHS OF FY86:** \$ 128,139.61

**PROJECTED TOTAL COST SAVINGS
FOR FY86:** \$ 153,767.53

St. Devens Labor and Equipment Utilization Cards

This is a tabulation of the number of times Preventive Maintenance tasks performed Self-Help tasks and the number of hours required to accomplish these tasks. Multiplying by the current PM wage rate provides the resulting cost avoidance had these tasks been accomplished through self-help.

Code	Task	February		March		April		May		June		July	
		No.	Hrs.	No.	Hrs.	No.	Hrs.	No.	Hrs.	No.	Hrs.	No.	Hrs.
25	Caulk window/door frame							5	2.0	9	3.5	16	7.0
27	Weatherstrip doors, w/dws											4	1.5
04	Rpr/Rpl shower curtain rod					2	1.0	5	4.0	5	2.5	1	1.2
05	Rpr/Rpl cabinet catch	3	0.5					5	0.5				
08	Rpr/Rpl cabinet hardware					3	2.0	10	4.5	17	6.5		
13	Rolaluncombndrclose	1	0.5	4	2.0	24	12.0	29	15.5	47	23.0	31	15.0
15	Repair/replace door stop	13	2.5	3	.5	7	2.0	10	3.5	15	3.0	5	3.5
23	Repair door knob	19	8.0	16	7.5	40	18.5	36	39.0	70	29.5	37	19.0
24	Rpl/instl door knob	6	4.0	10	6.5	25	13.5	75	49.0	66	45.0	52	32.5
33	Ins/rol/rpr traverse rod	4	3.0	2	1.5	6	2.5	9	6.0	10	6.5	2	1.0
36	Resecure wood handrail	3	1.5	2	.5			4	2.0				
45	Hndialuncombdrstv	2	1.0	3	1.5	14	7.0	37	18.5	21	9.5	25	13.5
52	Rci door bell button	2	0.5			1	0.5	3	1.5	5	1.5	6	3.0
54	Rpl switch/receptacle					5	2.0	9	2.0	3	1.5	5	1.8
65	Rpr/rpl light fixture	14	7.5	7	4.0	20	12.5	35	24.0	51	30.5	28	15.5
74	Replace popup stopper	2	1.0	3	1.5	13	6.5	21	10.7			29	10.5
76	Replace faucet handle	2	0.5	2	0.5	9	2.5	32	10.0	23	9.3	26	8.5
77	Repair faucet leak	97	38.0	75	25.0	217	78.5	274	109.3	198	77.0	242	97.0
32	Caulk bathtub/shower	14	14.5	12	10.0	17	17.5	17	23.0	16	14.5	26	23.5
84	Replace shower head	2	.9	2	1.0	3	3.4	9	4.7	1	0.5	5	2.5
90	Replace toilet seat							1	0.5	2	1.0		
93	Unplug toilet	1	.5	4	2.0	12	7.0	14	7.0	14	7.5	15	8.8
94	Unplug drain and etc.	16	8.5	5	2.5	70	40.0	48	28.5	43	22.5	50	25.5

Total # of cards for month	34	22	79	117	105	102
Total # of hours for month	92.9	71	228.9	365.7	294.8	290.6
Labor Cost @ \$19.00/hr.	\$1,765.10	\$1,349.00	\$4,349.10	\$6,940.30	\$5,601.20	\$5,521.40

Total Labor Cost For Test Period \$25,519.10
Average Monthly Labor Cost During Test Period \$ 4,253.18

APPENDIX C:

COMPILED QUESTIONNAIRES

FT. DEVENS SELF-HELP QUESTIONNAIRE FOR FAMILY HOUSING OCCUPANTS

This questionnaire is designed to assist the Army Family Housing Office in evaluating the self-help program. Please ensure that the senior service member completes this questionnaire. A high completion rate from family housing occupants will help to improve the self-help program. Please mail the questionnaire in the enclosed envelope within one week of receipt.

1. How long have you lived in your present quarters? (Please check one.)

- 7% (1) Less than 1 year
- 25% (2) 1-2 years
- 46% (3) 2-3 years
- 22% (4) 3+ years

2. Do you enjoy doing repairs/working with your hands?

- 50% (1) Yes
- 5% (2) No
- 44% (3) Sometimes

3. What is your formal education? (Please check one.)

- 1% (1) Some high school
- 16% (2) Completed high school
- 4% (3) GED
- 1% (4) Vocational/Technical
- 43% (5) Some college
- 30% (6) Completed college
- 5% (7) Graduate degree

SCOPE OF SELF-HELP PROGRAM

4. Are you familiar with the self-help program at other installations?

- 83% (1) Yes
- 17% (2) No -- go to 6

5. Is the program at this installation more extensive, less extensive, or about the same as other installations?

- 17% (1) More extensive
- 17% (2) Less extensive
- 57% (3) About the same
- 9% (4) Did not participate

6. Do you know the difference between occupant self-help and Directorate of Engineering and Housing preventive maintenance?

- 91% (1) Yes
- 9% (2) No

7. What are your overall impressions of the self-help program at this installation?

- 53% (1) Program should be expanded
- 43% (2) Program should remain the same
- 1% (3) Program should be decreased
- 3% (4) Program should be terminated

PROGRAM PARTICIPATION

8. Do you participate in the self-help program?

- 88% (1) Yes -- Go To 10
- 12% (2) No

9. If no, why not?

- 67% (1) Don't have time
- 8% (2) Don't understand program
- 17% (3) Don't have necessary skills
- 8% (4) Self-help tasks are accomplished otherwise

10. Approximately how often do you (or someone in your household) perform self-help tasks? Please circle daily, weekly, monthly, less frequently, or never for each listed task area.

TASKS	Daily	Weekly	Monthly	Less Frequently	Never
Painting	0%	0%	1%	26%	73%
Carpentry	0%	1%	7%	32%	60%
Hardware	1%	5%	15%	54%	22%
Electrical	0%	1%	5%	29%	64%
Plumbing	0%	5%	11%	47%	37%
Yard	13%	55%	8%	12%	2%

11. Does this installation encourage self-help participation?

- 75% (1) Yes
- 9% (2) No
- 16% (3) Don't know

12. Does this installation have some kind of award or recognition program for outstanding quarters?

- 95% (1) Yes
- 1% (2) No
- 4% (3) Don't know

13. How does your participation here compare with your participation at previous installations?

- 14% (1) Participate more
- 9% (2) Participate less
- 42% (3) Participate about the same
- 2% (4) Do not participate here
- 33% (5) Did not participate at previous installations.

KNOWLEDGE OF THE PROGRAM

14. How was information on the self-help program provided to you?

- 0% (1) Letter
- 8% (2) Pamphlet
- 30% (3) In-processing presentation
- 7% (4) Other -- please specify _____
- 5% (5) No information provided

15. Do you know what type of self-help work is allowed?

- 37% (1) Yes
- 13% (0) No

16. Is some form of I.D. required to obtain supplies?

- 100% (1) Yes
- 0% (2) No

17. Do you know where to get self-help questions answered?

- 94% (1) Yes
- 6% (0) No

18. If you decide not to perform a routine self-help project, will a preventive maintenance team accomplish the task upon your request?

- 49% (1) Yes
- 12% (0) No
- 39% (8) Don't know

19. Have you ever been told by the Preventive Maintenance Team or the Directorate of Engineering and Housing service desk that your request should be done by self-help?

- 31% (1) Yes
- 48% (2) No
- 21% (8) Don't know

ACCESSIBILITY OF TRAINING

20. Are you required to complete training (either classroom or informal) before you can use supplies?

- 99% (1) Yes
- 1% (0) No

21. Is training available to all family members?

- 81% (1) Yes
- 6% (0) No -- go to 23
- 13% (8) Don't know

22. If yes, is the training available to family members at a convenient time and place?

70% (1) Yes
30% (0) No

23. Would you say that training is adequate?

97% (1) Yes -- Go to 25
13% (0) No

24. If no, why not? Was training: (Check all that apply)

79% (1) Too brief
13% (2) Too simple
8% (3) Too detailed
8% (4) Too complicated

OCCUPANT RESPONSIBILITY

25. Were you provided training and/or written guidance on your housing responsibilities? (Check one)

3% (1) Training
47% (2) Written guidance
48% (3) Both were provided
2% (4) Neither one were provided

26. Were you provided training and/or written guidance specifying the difference between damage and normal wear and tear? (Check one)

6% (1) Training
32% (2) Written guidance
16% (3) Both were provided
46% (4) Neither one were provided

27. What is your responsibility for damage?

13% (1) Must repair
17% (2) Must pay
0% (3) None
42% (4) Both repair and pay
28% (5) Don't know

28. Do you know what criteria must be met to check out of your quarters?

72% (1) Yes
28% (0) No

PROGRAM SUPPORT

29. Have you purchased materials or tools for required self-help projects from a commercial store?

57% (1) Yes
33% (0) No

30. Are the required materials available at the self-help service center when needed? (Please check one)

- 2% (1) All of the time
- 80% (2) Most of the time
- 14% (3) Occasionally
- 3% (4) Infrequently
- 1% (5) Never

31. Are the required tools available at the self-help service center when needed? (Please check one)

- 2% (1) All of the time
- 75% (2) Most of the time
- 14% (3) Occasionally
- 3% (4) Infrequently
- 1% (5) Never

32. Please indicate below the materials and/or tools that have been unavailable when needed.

33. Are the Self-Help Service Center hours convenient?

- 59% (1) Yes -- Go to 35
- 41% (0) No

34. If no, what hours would be the most convenient for you?

- 5% more AM hours; 39% more evening hours; 13% more weekends; 23% more AM and evenings; 18% more evening and weekend; 2% more AM, evening, weekend

SELF-HELP PAMPHLET

35. Were you provided the Handbook for Family housing Occupants (DA PAM 210-2) upon arrival at this installation?

- 98% (1) Yes
- 1% (0) No

36. Were you provided information other than the DA PAM 210-2?

- 40% (1) Yes
- 60% (0) No

37. Was reading the pamphlet a required part of your training?

- 39% (1) Yes
- 49% (0) No
- 12% (3) Did not receive training

EVALUATION OF THE PROGRAM

38. Does the program meet your needs in maintaining quality housing?

83% (1) Yes -- Go to 40

17% (8) No

39. If no, how does it fail? 13% out of tools; 15% out of supplies; 27% inconvenient hours;

35% too many restrictions; 7% DEH more available; 7% more extensive training

40. Have you ever requested permission to perform an unauthorized task?

11% (1) Yes

89% (9) No -- Go to 43

41. If yes, were you given permission to perform the task?

29% (1) Yes -- Go to 43

71% (3) No

42. If no, please list the tasks that you were not given permission to perform.

55% carpentry; 39% painting; 12% electrical; 13% grounds maintenance; 12% other

43. Are you currently required to perform some tasks that you feel should be done by others?

16% (1) Yes

84% (9) No -- Go to 45

44. If yes, do you generally complete these tasks anyway?

73% (1) Yes

27% (3) No

45. What changes, if any, would you suggest in the self-help program?

7% tool availability; 5% material availability; 12% better hours; 3% personnel attitude;

5% better stock; 3% occupant duties; 8% overall program; 5% DEH more available; 31% none;

5% fewer restrictions; 7% training; 8% other

FT. LEE SELF-HELP QUESTIONNAIRE FOR FAMILY HOUSING OCCUPANTS

This questionnaire is designed to assist the Army Family Housing Office in evaluating the self-help program. Please ensure that the senior service member completes this questionnaire. A high completion rate from family housing occupants will help to improve the self-help program. Please mail the questionnaire in the enclosed envelope within one week of receipt.

1. How long have you lived in your present quarters? (Please check one.)

- 3% (1) Less than 1 year
- 44% (2) 1-2 years
- 35% (3) 2-3 years
- 18% (4) 3+ years

2. Do you enjoy doing repairs/working with your hands?

- 14% (1) Yes
- 38% (2) No
- 48% (3) Sometimes

3. What is your formal education? (Please check one.)

- 0% (1) Some high school
- 6% (2) Completed high school
- 2% (3) GED
- 3% (4) Vocational/Technical
- 51% (5) Some college
- 24% (6) Completed college
- 14% (7) Graduate degree

SCOPE OF SELF-HELP PROGRAM

4. Are you familiar with the self-help program at other installations?

- 63% (1) Yes
- 37% (2) No -- go to 6

5. Is the program at this installation more extensive, less extensive, or about the same as other installations?

- 32% (1) More extensive
- 10% (2) Less extensive
- 45% (3) About the same
- 13% (4) Did not participate

6. Do you know the difference between occupant self-help and Directorate of Engineering and Housing preventive maintenance?

- 96% (1) Yes
- 4% (2) No

7. What are your overall impressions of the self-help program at this installation?

- 52% (1) Program should be expanded
- 36% (2) Program should remain the same
- 6% (3) Program should be decreased
- 6% (4) Program should be terminated

PROGRAM PARTICIPATION

8. Do you participate in the self-help program?

- 91% (1) Yes -- Go To 11
- 9% (2) No

9. If no, why not?

- 58% (1) Don't have time
- 14% (2) Don't understand program
- 14% (3) Don't have necessary skills
- 14% (4) Self-help tasks are accomplished otherwise

10. Approximately how often do you (or someone in your household) perform self-help tasks? Please circle daily, weekly, monthly, less frequently, or never for each listed task area.

TASKS	Daily	Weekly	Monthly	Less Frequently	Never
Painting	0%	0%	3%	48%	49%
Carpentry	0%	3%	7%	50%	40%
Hardware	3%	8%	31%	35%	24%
Electrical	0%	3%	7%	37%	53%
Plumbing	0%	3%	13%	39%	39%
Land	16%	20%	0%	4%	0%

11. Does this installation encourage self-help participation?

- 82% (1) Yes
- 7% (2) No
- 11% (3) Don't know

12. Does this installation have some kind of award or recognition program for outstanding quarters?

- 86% (1) Yes
- 5% (2) No
- 5% (3) Don't know

13. How does your participation here compare with your participation at previous installations?

- 23% (1) Participate more
- 4% (2) Participate less
- 40% (3) Participate about the same
- 3% (4) Do not participate here
- 3% (5) Did not participate at previous installations.

KNOWLEDGE OF THE PROGRAM

14. How was information on the self-help program provided to you?

- 17% (1) Letter
- 17% (2) Pamphlet
- 42% (3) In-processing presentation
- 18% (4) Other -- please specify _____
- 6% (5) No information provided

15. Do you know what type of self-help work is allowed?

- 50% (1) Yes
- 20% (0) No

16. Is some form of I.D. required to obtain supplies?

- 32% (1) Yes
- 18% (2) No

17. Do you know where to get self-help questions answered?

- 92% (1) Yes
- 8% (0) No

18. If you decide not to perform a routine self-help project, will a preventive maintenance team accomplish upon your request?

- 50% (1) Yes
- 17% (0) No
- 33% (5) Don't know

19. Have you ever been told by the Preventive Maintenance Team or the Directorate of Engineering and Housing service desk that your request should be done by self-help?

- 27% (1) Yes
- 54% (2) No
- 19% (3) Don't know

ACCESSIBILITY OF TRAINING

20. Are you required to complete training (either classroom or informal) before you can use supplies?

- 73% (1) Yes
- 27% (0) No

21. Is training available to all family members?

- 49% (1) Yes
- 13% (0) No -- go to 23
- 38% (2) Don't know

22. If yes, is the training available to family members at a convenient time and place?

31% (1) Yes

69% (0) No

23. Would you say that training is adequate?

79% (1) Yes -- Go to 25

21% (0) No

24. If no, why not? Was training: (Check all that apply)

58% (1) Too brief

37% (2) Too simple

37% (3) Too detailed

18% (4) Too complicated

OCCUPANT RESPONSIBILITY

25. Were you provided training and/or written guidance on your housing responsibilities? (Check one)

13% (1) Training

46% (2) Written guidance

30% (3) Both were provided

1% (4) Neither one were provided

26. Were you provided training and/or written guidance specifying the difference between damage and normal wear and tear? (Check one)

10% (1) Training

47% (2) Written guidance

21% (3) Both were provided

22% (4) Neither one were provided

27. What is your responsibility for damage?

12% (1) Must repair

20% (2) Must pay

4% (3) None

52% (4) Both repair and pay

12% (5) Don't know

28. Do you know what criteria must be met to check out of your quarters?

82% (1) Yes

18% (0) No

PROGRAM SUPPORT

29. Have you purchased materials or tools for required self-help projects from a commercial store?

58% (1) Yes

42% (0) No

30. Are the required materials available at the self-help service center when needed? (Please check one)

- 10% (1) All of the time
- 69% (2) Most of the time
- 14% (3) Occasionally
- 5% (4) Infrequently
- 1% (5) Never

31. Are the required tools available at the self-help service center when needed? (Please check one)

- 8% (1) All of the time
- 70% (2) Most of the time
- 13% (3) Occasionally
- 6% (4) Infrequently
- 3% (5) Never

32. Please indicate below the materials and/or tools that have been unavailable when needed.

33. Are the Self-Help Service Center hours convenient?

- 92% (1) Yes -- Go to 35
- 8% (2) No

34. If no, what hours would be the most convenient for you?

17% more AM hours; 33% more evening hours; 50% more evenings and weekends

SELF-HELP PAMPHLET

35. Were you provided the Handbook for Family housing Occupants (DA PAM 210-2) upon arrival at this installation?

- 90% (1) Yes
- 10% (2) No

36. Were you provided information other than the DA PAM 210-2?

- 63% (1) Yes
- 37% (2) No

37. Was reading the pamphlet a required part of your training?

- 43% (1) Yes
- 47% (2) No
- 10% (3) Did not receive training

EVALUATION OF THE PROGRAM

38. Does the program meet your needs in maintaining quality housing?

85% (1) Yes -- Go to 40
15% (0) No

39. If no, how does it fail? 9% out of tools; 18% personnel attitude; 18% too many restrictions;

9% more extensive training; 46% other

40. Have you ever requested permission to perform an unauthorized task?

20% (1) Yes
80% (0) No -- Go to 43

41. If yes, were you given permission to perform the task?

47% (1) Yes -- Go to 43
53% (0) No

42. If no, please list the tasks that you were not given permission to perform.

14% carpentry; 38% painting; 14% electrical; 29% grounds maintenance; 15% other

43. Are you currently required to perform some tasks that you feel should be done by others?

31% (1) Yes
69% (0) No -- Go to 45

44. If yes, do you generally complete these tasks anyway?

76% (1) Yes
24% (0) No

45. The self-help program at Ft. Lee has recently undergone a major restructuring of its operations. Were you aware of this change prior to receiving this questionnaire?

82% (1) Yes
18% (0) No

46. Have you visited the new U-Do-It Center since its opening in March?

87% (1) Yes
13% (0) No

47. Please describe briefly your impressions of the changes in the self-help program at Ft. Lee.

36% favorable; 58% unfavorable; 6% neutral

48. What changes, if any, would you suggest in the self-help program?

12% tool availability; 14% material availability; 2% better hours; 20% personnel attitudes; 16% overall program;

2% DEW more available; 23% none; 6% fewer restrictions; 2% training; 21% other

FT. DEVENS SELF-HELP QUESTIONNAIRE FOR DIRECTORATE OF ENGINEERING AND HOUSING

This questionnaire is designed to assist the Army Family Housing Office in evaluating the self-help program. A high completion rate from Directorate of Engineering and Housing personnel will help to improve the self-help program. Please mail the questionnaire in the attached envelope within one week of receipt.

1. Would you say that the scope or level of the self-help program at this installation has increased, decreased or remained the same over the last three years?

86% (1) Increased
14% (2) Decreased
14% (3) Remained the same

2. What are your overall impressions of the self-help program at this installation? (Please check one.)

83% (1) Program should be expanded
17% (2) Program should remain the same
0% (3) Program should be decreased
0% (4) Program should be terminated

KNOWLEDGE OF THE PROGRAM

3. How do you provide information on the self-help program? (Check all that apply.)

43% (1) Letter
86% (2) Pamphlet
71% (3) In-processing information
14% (4) Other (specify) _____
14% (5) No information provided

4. Are occupants given written information specifying the type of self-help work that is permitted?

100% (1) Yes
0% (2) No

5. Is the difference between occupant self-help and Directorate of Engineering and Housing preventive maintenance made clear to occupants?

100% (1) Yes
0% (2) No

6. If routine self-help work is not done, will a preventive maintenance team perform the task?

100% (1) Yes
0% (2) No

7. Does the Preventive Maintenance Team or Directorate of Engineering and Housing Service Desk ever tell a family housing occupant that requested work should be done through self-help?

100% (1) Yes
0% (2) No

OCCUPANT RESPONSIBILITY

8. Do you provide training and/or written guidance on occupant responsibilities? (Please check one.)

- 0% (1) Training
- 0% (2) Written guidance
- 36% (3) Both were provided
- 64% (4) Neither were provided

9. Do you provide training and/or written guidance to occupants specifying the difference between damages and normal wear and tear?

- 14% (1) Training
- 29% (2) Written guidance
- 36% (3) Both were provided
- 29% (4) Neither were provided

10. Does this installation have a method to identify and determine damages?

- 100% (1) Yes -- go to question 12
- 0% (2) No

11. If no, why not? _____

PROGRAM PARTICIPATION

12. Does this installation emphasize self-help participation?

- 100% (1) Yes
- 0% (2) No

13. Do the majority of family housing occupants participate in the self-help program?

- 100% (1) Yes
- 0% (2) No

14. What is the level of participation in the self-help program? Please circle "1" for yes or "0" for no for each of the following statements.

	<u>Yes</u>	<u>No</u>
a. Participants do what is required	83% 1	17% 0
b. Participants do less than required	50% 1	50% 0
c. Participants do extra allowable work	0% 1	100% 0
d. Participants do non-authorized work	33% 1	67% 0
e. Participants do unacceptable work	83% 1	17% 0

15. Does this installation give some kind of award or recognition to occupants for outstanding quarters?

- 100% (1) Yes
- 0% (2) No

16. Does rank make a difference in participation level?

29% (1) Yes

57% (0) No -- go to question 18

14% (8) Don't know

17. If yes, please check which of the following ranks has a low participation level. (Check all that apply.)

0% (1) E1-E4

0% (2) E5-E7

0% (3) WO

0% (4) O1-O3

100% (5) O4+

18. Is participation in the self-help program voluntary?

0% (1) Yes

100% (0) No

ACCESSIBILITY OF TRAINING

19. Is Family Housing Self-Help training provided to occupants?

100% (1) Yes

0% (0) No

20. Are occupants required to complete training (either classroom or informal) before they are permitted to use supplies?

100% (1) Yes

0% (0) No

21. Is training made available to all family members?

83% (1) Yes

17% (0) No -- go to question 23

22. If yes, is the training available to family members at a convenient time and place?

100% (1) Yes

0% (0) No

23. Would you say that all, most, some or none of the family housing occupants attend training? (Please check one.)

14% (1) All

14% (2) Most

57% (3) Some

1% (4) None

15% (5) Don't know

24. Do occupants ever purchase materials or tools for required self-help tasks from a commercial store?

29% (1) Yes
0% (0) No
71% (8) Don't know

SELF-HELP PAMPHLET

25. Do you provide the Handbook for Family Housing Occupants (DA PAM 210-2) to family housing occupants upon their arrival at this installation?

57% (1) Yes
43% (0) No

26. Do you provide information on self-help other than the DA PAM 210-2 pamphlet to family housing occupants?

96% (1) Yes
14% (0) No

27. Do you require family housing occupants to read the DA PAM 210-2 as part of their training?

57% (1) Yes
43% (0) No

EVALUATION OF THE PROGRAM

28. Does the self-help program aid the Directorate of Engineering and Housing in the maintenance of quality housing?

100% (1) Yes -- go to question 30
0% (0) No

29. If no, why does the program fail?

30. Which of the following would you like to see improved in the program? Please check each area that you feel should be improved.

50% (1) Training
17% (2) Scope of work allowed
14% (3) Availability of materials
50% (4) Self-help service center open more hours
0% (5) Incentive or recognition awards
17% (6) Increased funding
0% (7) No change needed

31. Does the Directorate of Engineering and Housing have a program to measure the effectiveness of the self-help program?

14% (1) Yes
29% (0) No
57% (8) Don't know

32. Is the self-help program cost effective?

25% (1) Yes
0% (0) No
14% (8) Don't know

33. Are you satisfied with the overall performance of self-help tasks by family housing occupants?

14% (1) Yes
86% (0) No

34. Is rework ever required?

100% (1) Yes
0% (0) No -- go to question 38

35. If yes, about what % of rework?

_____ (Percentage)

36. If yes, was any rework outside the scope of self-help?

33% (1) Yes
67% (0) No -- go to question 38

37. If yes, what % of work is outside the scope of self-help?

_____ (Percentage)

38. What changes, if any, would you suggest in the self-help program?

PLEASE RETURN THE QUESTIONNAIRE IN THE STAMPED, SELF-ADDRESSED ENVELOPE TO:

Construction Engineering Research Laboratory
P.O. Box 4005
Champaign, Illinois 61820-1305
Attn: C. Morris/F5

THANK YOU FOR TAKING THE TIME TO HELP WITH THIS SURVEY.

FT. LEE SELF-HELP QUESTIONNAIRE FOR DIRECTORATE OF ENGINEERING AND HOUSING

This questionnaire is designed to assist the Army Family Housing Office in evaluating the self-help program. A high completion rate from Directorate of Engineering and Housing personnel will help to improve the self-help program. Please mail the questionnaire in the attached envelope within one week of receipt.

1. Would you say that the scope or level of the self-help program at this installation has increased, decreased or remained the same over the last three years?

88% (1) Increased
0% (2) Decreased
12% (3) Remained the same

2. What are your overall impressions of the self-help program at this installation? (Please check one.)

50% (1) Program should be expanded
50% (2) Program should remain the same
0% (3) Program should be decreased
0% (4) Program should be terminated

KNOWLEDGE OF THE PROGRAM

3. How do you provide information on the self-help program? (Check all that apply.)

40% (1) Letter
57% (2) Pamphlet
57% (3) In-processing information
50% (4) Other (specify) _____
0% (5) No information provided

4. Are occupants given written information specifying the type of self-help work that is permitted?

75% (1) Yes
25% (0) No

5. Is the difference between occupant self-help and Directorate of Engineering and Housing preventive maintenance made clear to occupants?

98% (1) Yes
12% (0) No

6. If routine self-help work is not done, will a preventive maintenance team perform the task?

75% (1) Yes
25% (0) No

7. Does the Preventive Maintenance Team or Directorate of Engineering and Housing Service Desk ever tell a family housing occupant that requested work should be done through self-help?

100% (1) Yes
0% (0) No

OCCUPANT RESPONSIBILITY

8. Do you provide training and/or written guidance on occupant responsibilities? Please check one.)

14% (1) Training
71% (2) Written guidance
0% (3) Both were provided
15% (4) Neither were provided

9. Do you provide training and/or written guidance to occupants specifying the difference between damages and normal wear and tear?

17% (1) Training
33% (2) Written guidance
33% (3) Both were provided
17% (4) Neither were provided

10. Does this installation have a method to identify and determine damages?

88% (1) Yes -- go to question 12
12% (0) No

11. If no, why not?

PROGRAM PARTICIPATION

12. Does this installation emphasize self-help participation?

100% (1) Yes
0% (0) No

13. Do the majority of family housing occupants participate in the self-help program?

43% (1) Yes
57% (2) No

14. What is the level of participation in the self-help program? Please circle "1" for yes or "0" for no for each of the following statements.

	<u>Yes</u>	<u>No</u>
a. Participants do what is required	43% 1	57% 0
b. Participants do less than required	67% 1	33% 0
c. Participants do extra allowable work	50% 1	50% 0
d. Participants do non-authorized work	33% 1	67% 0
e. Participants do unacceptable work	33% 1	67% 0

15. Does this installation give some kind of award or recognition to occupants for outstanding quarters?

100% (1) Yes

0% (0) No

16. Does rank make a difference in participation level?

0% (1) Yes

82% (2) No -- go to question 18

33% (8) Don't know

17. If yes, please check which of the following ranks has a low participation level. (Check all that apply.)

0% (1) E1-E4

100% (2) E5-E9

0% (3) WO

100% (4) O1-O3

100% (5) O4+

18. Is participation in self-help voluntary?

12% (1) Yes

88% (2) No

19. Is Family Housing Self-Help training provided to occupants?

50% (1) Yes

50% (0) No

20. Are occupants required to complete training (either classroom or informal) before they are permitted to use supplies?

12% (1) Yes

88% (0) No

21. Is training made available to all family members?

71% (1) Yes

29% (0) No -- go to question 23

22. If yes, is the training available to family members at a convenient time and place?

67% (1) Yes

33% (0) No

23. Would you say that all, most, some or none of the family housing occupants attend training? (Please check one)

0% (1) All

17% (2) Most

50% (3) Some

33% (4) None

0% (8) Don't know

24. Do occupants ever purchase materials or tools for required self-help tasks from a commercial store?

29% (1) Yes
14% (0) No
57% (2) Don't know

SELF-HELP PAMPHLET

25. Do you provide the handbook for Family Housing Occupants (DA PAM 210-2) to family housing occupants upon their arrival at this installation?

71% (1) Yes
29% (0) No

26. Do you provide information on self-help other than the DA PAM 210-2 pamphlet to family housing occupants?

86% (1) Yes
14% (0) No

27. Do you require family housing occupants to read the DA PAM 210-2 as part of their training?

91% (1) Yes
9% (0) No

EVALUATION OF THE PROGRAM

28. Does the self-help program aid the Directorate of Engineering and Housing in the maintenance of quality housing?

38% (1) Yes
12% (0) No

29. If no, why does the program fail?

30. Which of the following would you like to see improved in the program? Please check each area that you feel should be improved.

50% (1) Training
12% (2) Scope of work allowed
0% (3) Availability of materials
0% (4) Self-Help Service Center open more hours
0% (5) Incentive or recognition awards
38% (6) Increased funding
0% (7) No change needed

31. Does the Directorate of Engineering and Housing have a program to measure the effectiveness of the self-help program?

38% (1) Yes

25% (0) No

37% (2) Don't know

32. Is the self-help program cost effective?

25% (1) Yes

25% (0) No

50% (2) Don't know

33. Are you satisfied with the overall performance of self-help tasks by family housing occupants?

57% (1) Yes

43% (0) No

34. Is rework ever required?

71% (1) Yes

29% (0) No -- go to question 38

35. If yes, what % of rework?

36. If yes, was any rework outside the scope of self-help?

33% (1) Yes

67% (0) No -- go to question 38

37. If yes, what % of work is outside the scope of self-help?

38. Have you received any feedback from family housing occupants regarding the changes in the self-help program?

43% (1) Yes

57% (0) No

39. If yes, please describe briefly the nature of this feedback.

100% favorable

40. What changes, if any, would you suggest in the self-help program?

APPENDIX D:

RECOMMENDED COMMERCIAL TEXTS

1. Homeowner's Complete Manual of Repair and Improvement
Reason: Contained more than three-quarters of required task areas.
Quality is good.
2. Complete Guide to Home Repair, Maintenance, and Improvement
Reason: Contained more than half of the required task areas.
Quality is good.
3. Consumer Guide Fix-It
Reason: Contained more than half of the required task areas.
Quality is good.
4. Home Improvement, Home Repair
Reason: Contained more than half of the required task areas.
Quality is fair.
5. The Feminine Fix-It Handbook
Reason: Contained more than half of the required task areas.
Quality is fair.

APPENDIX E:

REFERENCE MATERIAL EVALUATION FORMS

SELF-HELP
REFERENCE MATERIAL EVALUATION

Name of Publication _____

Did this publication meet your needs? Yes___ No___

If no, how was it deficient? _____

Additional suggestions _____

Please return to the U-DO-IT CENTER

APPENDIX F:

REPORTS FROM FORT LEE'S MICROCOMPUTER DATA BASE MANAGEMENT SYSTEM

These are sample outputs from the microcomputer used by the Fort Lee SHIP store to track SH accounts, inventories, usage of materials and tools, daily transaction amounts, etc. Similar systems should be instituted at all installations operating a Self-Help program.

```
===== REPORTS OPTIONS =====  
  
1.....Report Customer File by Quarters Number  
2.....Report Customer File by Name  
3.....Report Customer History File by Quarters Number  
4.....Report Inventory File by U-DO-IT Number  
5.....Report Inventory by Stock Number  
6.....Report Inventory History File by U-DO-IT Number  
7.....Report Organization File by Name  
8.....Report Organization History File by Name  
9.....Report Issues, Loans, and Turnins by Phase  
A.....Report Total Expenditures by Phase  
B.....Report Items to be Ordered by Stock Number  
C.....Report Overdue Items by Quarters Number  
Q.....End Report Functions
```

Select a number or Q to Quit

This file will give the customer's history by quarters number. It will give the item description, quantity, and date received.

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CUSTOMER HISTORY FILE

DESCRIPTION	QUANTITY	DATE
DOORSTOP, FLEX-TYPE	4	08/14/86
COVER, SWITCH SINGLE PLAS	1	08/14/86

Quarters Number

610C.DBF

Quantity
Received by
Occupant

Date
Received

Customer file in alphabetical
order by name. An individual
is located by name within this
file.

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1

U-DO-IT CENTER
CUSTOMER FILE
(Name Sequence)

NAME	SSN	QTRS NO	GRADE	HOME PH	DUTY PH
ABBAY, ALAN	[REDACTED]	29A	[REDACTED]	[REDACTED]	-3322
ABELING, KENNETH	[REDACTED]	626C	[REDACTED]	[REDACTED]	-1251
ACEVEDO, HECTOR L.	[REDACTED]	612D	[REDACTED]	[REDACTED]	-4470
ACEVEDO, EDWOM	[REDACTED]	240B	[REDACTED]	[REDACTED]	-1313
ADAIR, RONNIE M.	[REDACTED]	382A	[REDACTED]	[REDACTED]	-1369
ADAMS, ESING	[REDACTED]	632A	[REDACTED]	[REDACTED]	-2476
ADAMS, JAMES E. SR.	[REDACTED]	110B	[REDACTED]	[REDACTED]	2754
ADAMS, ROY G.	[REDACTED]	616A	[REDACTED]	[REDACTED]	-1258
ADAMSON, EDWARD	[REDACTED]	459D	[REDACTED]	[REDACTED]	-5655
ADDAIR, DAN L.	[REDACTED]	212	[REDACTED]	[REDACTED]	-3723
AINSLEY, CAROLANNE	[REDACTED]	19103E	[REDACTED]	[REDACTED]	-1226
AKIN, JERE H	[REDACTED]	7	[REDACTED]	[REDACTED]	734-4214
AKINS, VIRGIL J.	[REDACTED]	19405E	[REDACTED]	[REDACTED]	-2169
ALDRIDGE, KENNETH D.	[REDACTED]	97B	[REDACTED]	[REDACTED]	-1231
ALEXANDER, LOUIS	[REDACTED]	613B	[REDACTED]	[REDACTED]	-5901
ALEXANDER, SAMMIE L.	[REDACTED]	19302F	[REDACTED]	[REDACTED]	-4711

Customer file in quarters number sequence. Individuals are listed by his/her quarters number in this file.

U-DO-IT CENTER
CUSTOMER FILE
(Quarters Number Sequence)

QTR No.	SSN	NAME	GRADE	HOME PH	DUTY PH
		STILLIONS, EUGENE L			-3600
1028		BOWERS, ROBERT L			-2460
103A		BAILEY, LARRY			-2128
103C		CARBON, LARRY			-1925
1048		VINCENT, CHARLES L.			-4020
104C		KURZ, JEFFREY B.			-2524
104D		EDWARDS, PATRICIAL J.			-1521
105A		TABORN, ROY T.			-1622
105B		LANE, A. M.			-5167
106A		BENNETT, PHYLLIS N.			-5630
106B		PETERY, JAMES L.			-1671
106C		EDWARDS, JOSEPH T.			-2446
106D		CAVAZOS, JAIME			-3110
107A		FONTENOT, RONALD			-3098
107B		JUST, WILLIAM			-4367
107C		STEELE, WILLIAM			-4457

This inventory file for the U-Do-It Center is set up in U-Do-It number sequence (U-). These numbers match the numbers on the display items. When this number is entered in the computer, the computer will give the item description.

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U-DO-IT CENTER
INVENTORY FILE
(U-DO-IT No. Sequence)

U-DO-IT No.	DESCRIPTION	QTY	RO	ROP	DX	LOCATION
U1	EDGER,GAS	3	0	0		R -C -S -B
U10	HOE,GARDEN	14	25	15	Y	R -C -S -B
U101	PANELING, RYE	198	50	30	N	R -C -S -B
U102	MOLDING,BASEBOARD 1 GRV	458	900	450	N	R -C -S -B
U103A	1/4 QUARTER ROUND	0	900	450	N	R -C -S -B
U103B	1/3 QUARTER ROUND	99	900	450	N	R -C -S -B
U104	FINISH,WOOD PROVIN, #211	53	10	5	N	R -C -S -B
U105	PANELING,OATS	1531	50	30	N	R -C -S -B
U106	MOLDING CRNR PNL INTERMED	36	208	108	N	R -C -S -B
U107	MOLDING CRNR TRIM OUTSIDE	65	100	48	N	R -C -S -B
U108	CORD,EXTENSION 100FT	9	0	0		R -C -S -B
U109	CORD,EXTENSION 25FT	0	0	0		R -C -S -B
U11	CUTTER,GRASS	80	0	0	N	R -C -S -B
U110A	TEE CROSS,4' CEILING	0	900	450	N	R -C -S -B
U111	BRUSH,CABINET	15	0	0		R -C -S -B
U114	BRUSH,SNOW	100	0	0		R

This inventory file shows the quantity on hand

The amount the center wants to stock

The amount to reorder at

If an item is direct exchange

And location in the warehouse

Item stock number.

This stock inventory file is set up in stock number sequence with quantity, description of the item, price and U-Do-It number.

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Quantity on Hand

Cost of Item

U-Do-It No.

U-DO-IT CENTER
INVENTORY FILE
(Stock Number Sequence)

STOCK No.

QUANTITY

DESCRIPTION

PRICE

U-DO-IT No.

2940-00-M32-D01A	16	FILTER,STOVE 161/2X11 1/4	4.98	U69
2940-00-M32-D01B	98	FILTER,STOVE 20X11 1/2	4.98	U70
2940-00-M32-D01C	69	FILTER,STOVE 91/2X11 1/4	4.98	U68
3510-00-W08-B05C	38	CLAMPS,DRYER DUCT	0.37	U404
3740-00-252-3384	126	TRAP,MOUSE	1.50	U42
3740-00-260-3384	12	TRAP,RAT	2.50	U329
3740-00-M33-F020	2	FLY SWATTER	0.35	U374
3750-00-086-7690	122	RAKE,LAWN	3.15	U9
3750-00-171-7182	43	RAKE,GARDEN	7.10	U7
3750-00-224-9467	14	HOE,GARDEN	6.90	U10
3750-00-239-8678	80	CUTTER,GRASS	4.50	U11
3750-00-951-1585	95	SHEARS,HEDGE	2.60	U77
3750-00-959-3490	129	SPRINKLER	7.59	U81
3750-00-978-6159	48	SHEARS,GRASS	5.80	U78
4020-00-551-3343	49	CLOTHESLINE	0.04	U82
4110-00-M32-C01A				

Brief Description
of Item

This file gives the history
of U-Do-It Center stock items.

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INVENTORY HISTORY FILE

DESCRIPTION	STOCK NO.	DATE	QTY ORD	REC	DUE- IN	ON HAND
HOSE, GARDEN	4720-00-729-5334	07/10/86	113	70	43	137

It gives a brief description of the item

It displays the stock number

It shows the date of the last order

And the quantity that was ordered

And the quantity the U-Do-It Center received

The quantity due in to the U-Do-It Center

The number of items presently on hand

This report shows the transactions of the U-Do-It Center for 3 days, showing the number of transactions for each phase and also showing the breakdown by issue, loan, and turnin.

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U-DO-IT CENTER TRANSACTION REPORT

01 - Fam Hsg Qtrs	02 - Fam Hsg GnDs	03 - Admin Bldgs
04 - Tng Bldgs	05 - Trp Bks	06 - Other Fac
	07 - Post GnDs	

01	02	03	04	05	06	07	ISSUES	LOANS	TURNINS	DATE
15	3	5	0	5	0	0	26	63	72	07/25/86
23	9	0	0	0	0	0	32	121	116	07/26/86
16	7	0	0	0	0	0	23	108	104	07/27/86
*** Total ***										
54	19	5	0	5	0	0	81	292	292	

The expenditure report gives the dollar value of each phase and a daily total for each day and a total line of all days.

Page No. 1		U-DO-IT CENTER EXPENDITURES REPORT							Phase Number and Description								
08/14/86		01 - Fam Hsg Qtrs		02 - Fam Hsg Gn ds		03 - Admin Bldgs											
Phase Number		04 - Tng Bldgs		05 - Trp Bks		06 - Other Fac											
				07 - Post Gn ds													
01		02		03		04		05		06		07		DAILY TOT		DATE	
Daily Total																	
Line																	
119.29		27.86		64.07		0.00		40.67		38.85		0.00		290.74		07/25/86	
Total		68.47		65.83		0.00		0.00		0.00		0.00		134.30		07/26/86	
Line		63.83		58.37		0.00		0.00		0.00		0.00		122.20		07/27/87	
*** Total ***																	
251.59		152.06		64.07		0.00		40.67		38.85		0.00		547.24		Date	
		Total Expenditures for the Three Days															

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ITEMS TO BE ORDERED

DESCRIPTION	STOCK NO.	ROQ	PRICE	UI
AERATOR, FAUCET	4510-00-W03-C10A	27	1.25	EA
BAR, TOWEL SQUARE 36"	4510-00-W02-B03B	5	4.75	EA
BRUSH, PAINT 4"	8020-00-685-5393	76	2.15	EA
BRUSH, PAINT 2"	8020-00-205-6501	14	1.05	EA
BRUSH, PAINT 2 1/2"	8020-00-263-3867	20	2.25	EA
BULBS, LIGHT 25W	6240-00-143-3059	11	0.27	EA
CHAIN, DOOR IDEAL	5340-00-W12-E06C	15	2.70	EA
CLOTHESLINE	4020-00-551-3343	1151	0.04	FT
CLOTHESLINE DRYER UMBRELL	5340-00-R02-0C01	10	29.85	EA
COVER, RECPT DUPLEX PLAST	5975-00-216-A03E	2	0.37	EA
COVER, RECPT STAINLESS ST	5975-00-M32-E01B	25	0.15	EA
COVER, SWITCH SINGLE PLAS	5975-00-W16-A05A	47	0.14	EA
FILLER, WOOD PLASTIC 1/2 PT	8010-00-262-9171	24	0.94	EA
FILTER, STOVE 20X11 1/2	2490-00-M32-D01B	1	4.98	EA
GLOBE, BEDROOM SQUARE	6210-00-W10-F02A	8	3.23	EA
GLOBE, FIRELIGHT WHITE	6210-00-W12-F02A	5	4.13	EA
GUARD, DOOR HOME PROTECT.	5340-00-W12-C07D	7	2.25	EA
HANGERS, PICTURE 10LB	5340-00-M33-C03D	11	0.30	PK

MLQTRNO	MLITEM	MLQTY	MLDATE	MLPHONE	MLNAME
19201C	EDGER,GAS	1	07/29/86	-	RICHARDSON,HILLARD
19201C	MOWER,GAS	1	07/29/86	-	RICHARDSON,HILLARD
19201C	WEEDEATER,ELECTRIC	1	07/29/86	-	RICHARDSON,HILLARD
19201C	CORD,EXTENSION 100FT	1	07/29/86	-	RICHARDSON,HILLARD
19212K	MOWER,GAS	1	07/29/87	862-9135	ROLLE, DENNIS B.
19212K	WEEDEATER,ELECTRIC	1	07/29/87	862-9135	ROLLE, DENNIS B.
G CO	KNIFE,PUTTY 3"	1	08/01/86		
637D	WHEELBARROW	1	08/01/86	861-5384	JOHNSON, DARYL C.
461B	EDGER,GAS	1	08/01/86	733-8464	HARDY, ALFRED

An organization history file is maintained on all units and organizations listed on the previous page.

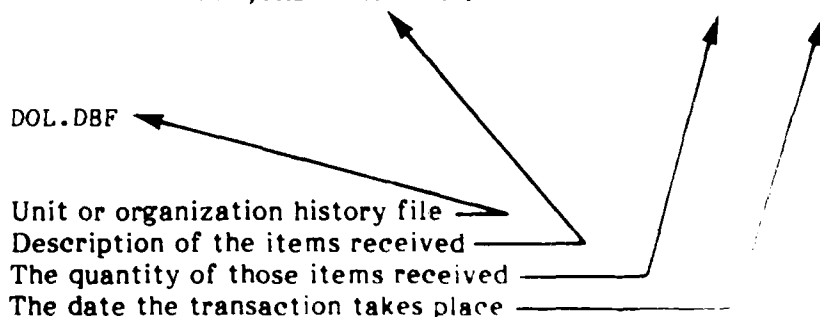
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ORGANIZATION HISTORY FILE

DESCRIPTION	QUANTITY	DATE
PAINT,AUT BR INTERIOR	1	08/05/86
PAINT,WHITE EXTER	2	08/05/86
BRUSH,PAINT 2 1/2"	2	08/05/86
KIT,PAINT ROLLER 9"	2	08/05/86

DOL.DBF

Unit or organization history file
Description of the items received
The quantity of those items received
The date the transaction takes place



This organization file is set up in name sequence. It shows the building number and wing the unit occupies and duty phone number. The expiration date is the date the unit's signature card expires with the U-Do-It Center.

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U-DO-IT CENTER
ORGANIZATION FILE
(Name Sequence)

ORG NAME	BLDG NO.		DUTY PHONE	EXP DATE
109TH	B-9302	W- B	2751/	
1515 DINING FACILITY	B-1515	W-	5527/4634	08/08/86
16TH FLD SVC CO	B-9303	W-A	1226/	07/21/87
1ST BN	B-	W-	2197/	07/17/86
267TH OM CO PO	B-9302	W- A	2128/	03/14/87
3700 DINING FACILITY	B-	W-	5527/4634	03/11/87
3701 DINING FACILITY	B-	W-	4634/	03/19/87
377TH CHEMICAL CO	B-12402	W-	5026/4985	08/05/87
392ND ARMY BAND	B-	W-	1251/	08/31/87
550TH	B-9302	W-	3295/	07/01/87
555TH	B-	W-	2635/1718	07/17/87
57TH TRANS CO	B-	W-	3434/	07/22/87
8400 DINING FACILITY	B-8400	W-	4634/	03/18/87
85TH EVAC HOSP	B-9304	W-A	5161/2238	06/22/87
99TH FLD SVC	B-	W-	1927/	07/26/86
ACS	B-12001	W-	3707/5137	07/22/87

APPENDIX G:

RECOMMENDED TRAINING SYLLABUS AND TRAINING CLASS EVALUATIONS

RECOMMENDED TRAINING SYLLABUS

- I. Introduction (approximately 10-15 minutes)
 - explanation of the SH program and its requirements as well as the differences between SH and PM followed by topics to be covered during class.
 - II. Presentation by Fire Department Personnel (30 minutes)
 - presentation of fire prevention techniques followed by a question and answer period.
 - III. Home Security (30-45 minutes)
 - demonstration/presentation of home security measures.
 - IV. Energy Conservation (15-30 minutes)
 - presentation of energy conservation measures followed by a question and answer period.
- (A short break may be appropriate at this time.)
- V. Maintenance and Repair Instruction (one hour)
 - using training aids and documentation, the instructor details the responsibilities of occupants with respect to the self help program. In addition, the instructor should provide instruction/guidance for self help tasks as necessary. Emphasis should be placed on hands on training when possible. The mission of the PM branch should again be explained at this point in order to ensure that occupants do understand the differences between PM and SH.
 - VI. Procedures (15 minutes)
 - self help store procedures and hours should be discussed.
 - VII. Question and Answer
 - questions not previously asked or answered should be discussed.

SELF-HELP CLASS EVALUATION

DATE:

This evaluation form is provided so that you can aid in the effort to improve the self-help program. Please check the applicable level of training you feel you received during the class you have just attended. Any additional comments will be very helpful. Your responses will be very important in determining the effectiveness of the recommendations being implemented and the need for any additional improvements.

LEVEL OF TRAINING	POOR	AVERAGE	EXCELLENT
1. The Facility (Classroom, parking, toilet, lights, etc.)	37.2	14.0	48.8
2. Training Aids		11.4	88.6
3. Fire Department Training		25.0	75.0
4. Energy Conservation Training	2.4	52.4	45.2
5. Self-Help Training			
a. Carpentry Section		22.0	78.0
b. Plumbing Section		13.6	86.4
c. Electrical Section		19.0	81.0
d. Sanitation Section		29.3	70.7
6. Overall Class Rating		18.2	81.8
		YES	NO
7. Was it worth your time?		95.5	4.5
8. Have you attended a Self-Help class at any other installation?		40.9	59.1
9. Was this class better than previous classes attended?		36.4 (61% Inappropriate)	2.3

COMMENTS

APPENDIX H:

TOOL AND EQUIPMENT LOAN DATA

This equipment loan information is from Fort Devens for the months of May, June, and July 1986.

All equipment listed is loaned for a period of 24 hours.

Item Description	May	Quantity Loaned	
		June	July
Cord, Electric (125 feet)	27	26	22
Grass Trimmer, Weed Eater	35	35	33
Hedge Trimmer	21	21	20
Ladder, Step (6 foot)	6	2	4
Ladder, Step (4 foot)	2		
Lawnmower, Gas	137	91	44
Lawnmower, Gas Can	75	51	36
Post Hole Digger	8	8	4
Rake, Iron	42	11	2
Shovel, Pointed	25	8	1
Spreader, Drop	162	24	6
Spreader, Rotary	31	5	3
Bush Cutter	1		
Clippers	2		
Lopper	2	3	
Caulking Gun	1	1	
Sledge Hammer	2	3	1
Push Broom		1	
Hoe		3	
8 lb. Hammer		1	
Putty Knife			1
Swing Blade			1

APPENDIX I:

RECOMMENDED TASK, SUPPLY, AND TOOL LISTS

RECOMMENDED TASK LIST

The letter code is as follows: R = mandatory; A = allowed by special permission; E = Encouraged; G = government supplied material; O = occupant supplied material; P = permanent, remains upon evacuation; T = temporary, remove upon evacuation; DX = direct exchange item. Fort Devens does not denote tasks as required or allowed, as well as not distinguishing between what materials will be government or occupant supplied. Therefore an "X" denotes tasks where Fort Devens follows the USA-JEFL recommendations exactly.

HOUSEKEEPING	GERL	Fort Lee	Fort Devens
1. Clean & polish wood furnishings and woodwork	RO		X
2. Clean upholstery, drapery and window shades	RO		X
3. Clean floors, walls, ceilings and windows	RO	RO	X
4. Clean lighting fixtures	RO	RO	X
(wash globes, and lens covers, clean out bugs)			X
5. Clean small appliances	RO		X
6. Clean and defrost refrigerator	RO	RO	X
7. Clean electric range	RO		X
(keep free of grease and food drippings)			
8. Clean gas range	RO	RO	X
9. Clean and unjam garbage disposal	RO	RO	X
10. Clean exterior of dishwasher	RO	RO	X
CARPENTRY			
11. Minor repair of wood fences & exterior storage	RG	EG	X
(repair damaged rails, shore up loose posts, lift sagging gates)			
12. Reset finishing nails	RG	EG	X
13. Refasten coathooks, clothes poles, closet shelves	RG	EG	X
14. Tighten/replace builders hardware	RG/DX	EG/DX	X
15. Lubricate locks and hardware	RG	EG	X
16. Replace door stops	RG/DX	EG/DX	X
17. Replace caulking around doors and windows	RG	EG	X
18. Repair small holes in door and window screens	RG	EG	X
19. Remove/rehang, clean and store door screens and window screens	RG		X
20. Repair/replace window shades, and brackets	RG/DX	EG/DX	X
21. Replace curtain rod and accessories	RG/DX	EG/DX	X
22. Hang pictures and mirrors	RG	RO	X
23. Replace clothesline	RG/DX	EG/DX	X
24. Replace/adjust kitchen and bathroom hardware (install/tighten paper holders, soap dishes...)	RG/DX	EG/DX	X
25. Adjust drawers	RG	EG	X
(sand or lubricate sticking edges)			
26. Patch small holes in wallboard or plaster	RG	EG	X
27. Install patio, fencing...	RG		X

Install shelves...	ADT		X
28. Unjam windows (unstick windows due to dried paint or dirt)	RG	EG	X
29. Minor repair of government-furnished furniture (glue loose joints, tighten hardware)	RG		X
30. Replace storm door closer and crash chain	RG/DX	ES/DX	X
31. Repair screen doors	RG	ES	X
32. Replace mail box	RG/DX	ES/DX	X
33. Replace mechanical door chime	RG/DX	ES/DX	X
34. Repair kitchen cabinets	RG/DX	ES/DX	X
35. Replace house numbers	RG/DX	ES/DX	X

PAINTING

36. Spot painting	RG	EG	
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ELECTRICAL

37. Replace broken globes	RG/DX	EG/DX	X
38. Replace starters	RG/DX	ES/DX	X
39. Replace blown fuses, reset tripped circuit breakers	RG/DX	EG/DX	X
40. Replace cracked/broken switch and receptacle plates.	RG/DX	RG/DX	X
41. Replace ceiling fixture (bulb)	RG		X

PLUMBING

41. Know how to shut off critical valves	RG	EG	X
42. Unclog drains and toilets	RG	EG	X
43. Repair leaky faucets, replace faucet handles	RG/DX	EG/DX	X
44. Repair/replace shower heads	RG/DX	ES/DX	X
45. Tighten/replace toilet seat	RG/DX	ES/DX	X
46. Replace tank lid	RG/DX	EG/DX	X
47. Correct running toilet (flush ball, float ball)	RG	EG	X
48. Adjust water level in toilet tank	RG	EG	X
49. Replace lift wires	RG/DX	ES/DX	X
50. Replace trip lever	RG/DX	ES/DX	X
51. Replace lift wire guide	RG/DX	ES/DX	X
52. Replace stopper and strainer	RG/DX	ES/DX	X
53. Replace and clean faucet aerator	RG/DX	EG/DX	X
54. Caulk around tub and tile	RG	EG	X
55. Perform first aid for leaky pipes	RG	RG	X
56. Disassemble trap under sink to unclog	RG	EG	X
57. Install insulating blankets on hot water heater	RG		X
58. Bleed radiator	RG		X

GAS

59. Identify and report suspected gas leaks	RG	RG	X
60. Relight pilot lights	RG	RG	X

HVAC

61. Clean and replace air filters	RG		X
62. Maintain furnace area (keep area free of debris and clutter)	RO	RO	X
63. Lubricate heating equipment	RG		X
64. Clean/lubricate identified components of ventilation system	RG		X
65. Remove radiator covers to clean convectors	RG		X
66. Conserve utilities	RO	RO	X
67. Install/replace weatherstripping	RG		X

APPLIANCES

68. Clean/replace filters in kitchen exhaust	RG/DX	RG/DX	X
69. Replace light bulbs in appliances	RG/DX	RG/DX	X

LANDS MAINTENANCE

70. Water, mow, edge, seed, fertilize, and mow lawns.	RG	RG	X
71. Minor pruning of trees, shrubs and vines	RG	RG	X
72. Replace/plant trees and shrubs	AGP		X
73. Clean and maintain yard	RG	RG	X
74. Maintain splash blocks (keep in proper position under downspout)	RG/DX	RG/DX	X
75. Clean gutters and downspouts	RG	RG	X
76. Fill ruts and eroded areas	RG	RG	X

PAVED AND STABILIZED AREAS

77. Clean walks, patios, steps and platforms	RG	RG	X
78. Clean oil and grease from pavement	RO	RO	X
79. Rake gravel	RG		X
80. Remove snow and ice	RG	RO	X

PEST CONTROL

81. Keep all food areas clean	RO	RO	X
82. Keep trash containers clean and tightly covered	RO	RO	X
83. Keep screens in good repair	RG	RG	X
84. Store wool goods in moth proof containers	RO	RO	X
85. Use mouse, roach traps safely and properly	RG	RG	X
86. Use authorized pesticides carefully and properly	AG	RG	

RASH AND REFUSE DISPOSAL

87. Place all refuse in refuse containers	RO	RO	X
88. Wrap all wet, odorous garbage	RO	RO	X
89. Maintain cans, covers, and collection points	RO	RO	X
90. Keep access to refuse containers clear	RO	RO	X

SECURITY

91. Install surface mounted locks on doors and windows	RG	ES	X
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FIRE PROTECTION

92. Replace batteries for smoke detectors, where applicable	RG/DX		X
--	-------	--	---

93. Know protection procedures	RG	RG	X
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MISCELLANEOUS

94. Move or store heavy articles	RG	RG	X
----------------------------------	----	----	---

RECOMMENDED SUPPLY INVENTORYS

An "X" denotes those items stocked by each test site installation.

Item	Fort Lee	Fort Devens
Carpentry		
Clothesline	X	X
Sash Cord	X	
Towel Bar	X	X
Toilet Paper Roller and Holder	X	X
Door Stop	X	X
Door Stop Bumper	X	X
Cabinet Catch	X	X
Barrel Bolt	X	X
Cabinet Hinge	X	X
Storm Door Closer	X	X
Hinged Hasp	X	X
Hook & Eye	X	X
Concave Door Knob	X	
Cabinet Pull	X	
Door Saver	X	X
Spackling Compound	X	X
Door Bell	X	
Window Shades & brackets	X	X
Mailbox	X	X
Soap Holder	X	X
Shower Curtain Rod	X	
Handrail Bracket	X	
Wood Filler	X	
Door Spring	X	
Masking Tape	X	
Window Handle	X	X
Building Numbers	X	
Steel Wool	X	X
Window Latch	X	
Machine Screws	X	X
Wood Screws	X	X
Silicon Spray	X	
Flat Washers	X	
Locking Washers	X	
Screen Patch Kits	X	
Nails	X	X
Sandpaper	X	X
Carpenter's Glue	X	
Curtain Rods & brackets	X	X
Smoke Detector batteries	X	

Painting

Paint	X	
Plastic Sheet	X	
Paint Brush	X	

Electrical

Adapter		X
Receptacle/Switch Plate	X	X
Glass Globe	X	X
Ceiling Fixture Nut	X	
Felt Washer	X	
Electrical Tape	X	
Starters	X	X
Fuses	X	X

Plumbing

Aerator (faucet)	X	X
Faucet Handle	X	
Faucet Washer	X	
Basin/Drain Stopper	X	X
Hose & Sprayer	X	
Basket Strainer	X	X
Showerhead	X	X
Float Ball	X	X
Flush Tank Ball	X	X
Lift Wire Guide	X	X
Tank Lever	X	X
Lift Wire	X	X
Lower Lift Wire	X	X
Float Rod	X	
Tank Flapper	X	X
Toilet Seat	X	X
Tank Lid	X	X
Force Cup	X	X
Tub Sealer	X	
Caulking		X
Insulating Blankets		

HVAC

Heating/AC Filter*	X	
Duct Tape*	X	X
Weatherstripping	X	X
Lubricating Oil	X	X
Heat Register	X	

Appliances

Exhaust Hood Filter	X
Appliance Lamp	X
Burner Bowl	X

Paved & Stabilized Areas

Icemelting compound*	X
	(sand & salt)

Pest Control

Mouse Traps	X	X
Roach Traps	X	
Rat Traps	X	
Insecticide (aerosol)	X	

Security

Bathroom Lock	X	
Passage Lock	X	X
Sash Lock (surface mount)	X	X
Deadbolt Lock	X	X
Security Chain	X	X
Latch	X	X
Lock Set	X	

Grounds and Maintenance

Grass Seed#	X	X
Fertilizer#	X	X
Rain Spout	X	
Splashblock#	X	
Black Dirt	X	
Gravel		
Trees, Shrubs#	X	

* The recommended stockage levels for these items are seasonal levels and should be maintained during the appropriate seasons.

Marked items should be considered for supply by local merchants under a BPA or contract with the Housing Division.

RECOMMENDED SUPPLY INVENTORY AND STOCKAGE LEVELS

Item	Recommended Inventory Level (Per 100 Households)	Unit of Measure
Carpentry -----		
DX+ Clothesline	.81	cl
DX Sash Cord	1.52	hk
DX Towel Bar	.21	ea
DX Toilet Paper Roller and Holder	.43	ea
DX Door Stop	1.98	ea
DX Door Stop Bumper	1.73	ea
DX Cabinet Catch	5.19	ea
Barrel Bolt	.68	ea
DX Cabinet Hinge	1.15	ea
DX Storm Door Closer	.64	ea
Hinged Hasp	.39	ea
Hook & Eye	.49	ea
DX Concave Door Knob	2.47	ea
DX Cabinet Pull	2.00	ea
Door Saver	.61	ea
Spackling Compound	5.10	cn
DX Door Bell	.61	ea
DX Window Shades	8.66	ea
DX Mailbox	1.22	ea
DX Soap Holder	.23	ea
DX Shower Curtain Rod	.04	ea
DX Handrail Bracket	.08	ea
Wood Filler	.98	cn
DX Door Spring	.08	ea
Masking Tape	.68	ro
DX Window Handle	.18	ea
DX Building Numbers	2 total	set
Steel Wool	.05	pk
Window Latch	.05	ea
Machine Screws		bx
Wood Screws		bx
Silicon Spray	.60	cn
Flat Washers	1.00	ea
Locking Washers	1.00	ea
Screen Patch Kits	.12	ea
Nails		50 lb box
Sandpaper	10.00	sht
Carpenter's Glue	2.00	btl
DX Curtain Rods	2.00	ea
DX Smoke Detector Batteries	.60	ea

+DX = direct exchange

Painting

Paint	3.54	gl
Plastic Sheet	2.10	ro
Paint Brush	1.08	ea

Electrical

DX Adapter	.14	set
DX Receptacie/Switch Plate	8.66	ea
DX Glass Globe	2.92	ea
Ceiling Fixture Nut	.44	ea
Felt Washer	2.16	ea
Electrical Tape	2.00	ro
DX Starters	.90	ea
DX Fuses	.50	ea

Plumbing

DX Aerator (faucet)	.73	ea
DX Faucet Handle	.17	ea
Faucet Washer	.09	ea
DX Basin/Drain Stopper	1.38	ea
DX Hose & Sprayer	.51	ea
DX Basket Strainer	1.01	ea
DX Showerhead	.93	ea
DX Float Ball	.21	ea
DX Flush Tank Ball	.36	ea
DX Lift Wire Guide	.09	ea
DX Tank Lever	.30	ea
DX Lift Wire	.24	ea
DX Lower Lift Wire	.29	ea
DX Float Rod	.11	ea
DX Tank Flapper	.19	ea
DX Toilet Seat	.81	ea
DX Tank Lid	.09	ea
Force Cup	.82	ea
Tub Sealer	7.59	tb
Putty Knife	2.10	ea
Caulking	.47	tb
Insulating Blankets	.20	ea

HVAC

Heating/AC Filter*	21.56	ea
Duct Tape*	129.87	ro
Weatherstripping	1.37	ea
Lubricating Oil	1.70	cn
DX Heat Register	.24	ea

Appliances

DX Exhaust Hood Filter	1.02	ea
DX Appliance Lamp	2.04	ea
DX Burner Bowl	.19	ea

Paved and Stabilized Areas

Icemelting Compound	site specific	lb
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Pest Control

Mouse Traps	10.00	ea
Roach Traps	37.40	ea
Rat Traps	2.50	ea
Insecticide (aerosol)	10.00	12 oz. can

Security

Bathroom Lock	.60	ea
Passage Lock	.05	ea
Sash Lock (surface mount)	1.37	ea
Deadbolt Lock	.38	ea
Security Chain	.38	ea
Latch	.46	ea
Lock Set	.10	ea

Grounds and Maintenance

Grass Seed	tbd	bag
Fertilizer	1.00	10 L
DX Rain Spout	.01	ea
DX Splashblock	.01	ea
Black Dirt	.20	ton
Gravel	.20	ton

*The recommended stockage level for these items are seasonal levels and should be maintained during the appropriate seasons.

RECOMMENDED TOOL AND EQUIPMENT LIST

An "X" denotes those items stocked by each test site installation.

ITEM	Fort Lee	Fort Devens
Shampooer	X	X
Wet Vacuum Cleaner	X	X
1/4" Electric Drill with Bits	X	X
12" Hand Drill		X
Hacksaw and Blades	X	X
Wood Chisels	X	X
24" Crow Bar	X	X
Hammers (Ball Peen, Carpenter's, Sledge, Tack)	X	X
Hatchet	X	X
Pliers (7" Needle Nose, Side Cutting, Slide Lock, 6" Slip Joint)		X
Wrenches	X	X
Ear Protectors	X	X
Screwdrivers (Flat-tip, Phillips)	X	X
Knives (Utility, Putty)	X	X
5" Drywall Knife	X	X
Goggles	X	X
50' Extension Cord	X	X
6' Wood Ladder	X	X
Saws (Bow, Pruning, Crosscut)	X	X
Carpenter Level	X	X
P Toilet Plunger	P	P
Lawn Rake	P	P
Garden Hoe	X	X
Hedge Shears	X	X
Grass Shears	X	X
P Garden Hose and Nozzle	P	P
Weed Cutter & Cord	X	X
P Garden Rake	P	X
Lawnmower, Gas	X	X
Pruning Shears	X	X
Fertilizer Spreader	X	X
Lawn Edger	X	X
P Snow Shovel	X	P
Push Broom	P	X
Garden Shovel	X	X
Furniture Dollie	X	X

P = items that may be permanently issued to quarters upon request of the occupant.

APPENDIX J:

RECOMMENDED INCENTIVE PROGRAM

The incentive program for the Self-Help Program will be a contest among family housing occupants based on evaluation of their housing units. It should be structured as follows:

1. Nominations

Nominations will be solicited through ads in the installation newspaper and signs posted at the SHIP and other strategic locations. Nominations will be made by both the housing area mayors and the occupants themselves. Occupants will be allowed to nominate other occupants as well as themselves. Once the nominations are received and organized by the mayors, the nominees will be contacted to determine whether or not they wish to participate. In this manner, a final list of entrants will be established.

2. Evaluation

Evaluation of the housing units will be performed by the housing area mayors. However, mayors will not be allowed to perform evaluations in their respective neighborhoods. The PM checklist or a reasonable facsimile thereof will be used as the basis upon which evaluations will be made. A committee of mayors will perform the evaluations using this checklist. Each mayor will complete a checklist and the results for each housing unit will be determined by summing and averaging the responses of the mayors.

3. Timing

This contest will be held on a quarterly or seasonal basis, possibly corresponding to the PM cycle.

4. Awards

Winners will be determined for each neighborhood. Recognition of quarterly winners should be accomplished through ads in the installation newspaper and by presentation of awards by the commander, perhaps at mayors' meetings. Occupants will be allowed to win more than once a year. At the end of the year, the person or persons who have won most frequently will be rewarded with dinner with the installation commander followed by presentation of a certificate. If no one has won more than once, a drawing will be held for dinner with the commander; however no certificate will be presented. Possible rewards for quarterly winners include: free passes to shows or attractions appearing at the installation, gift certificates to the PX, and free dinners at the Officer's Club.

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